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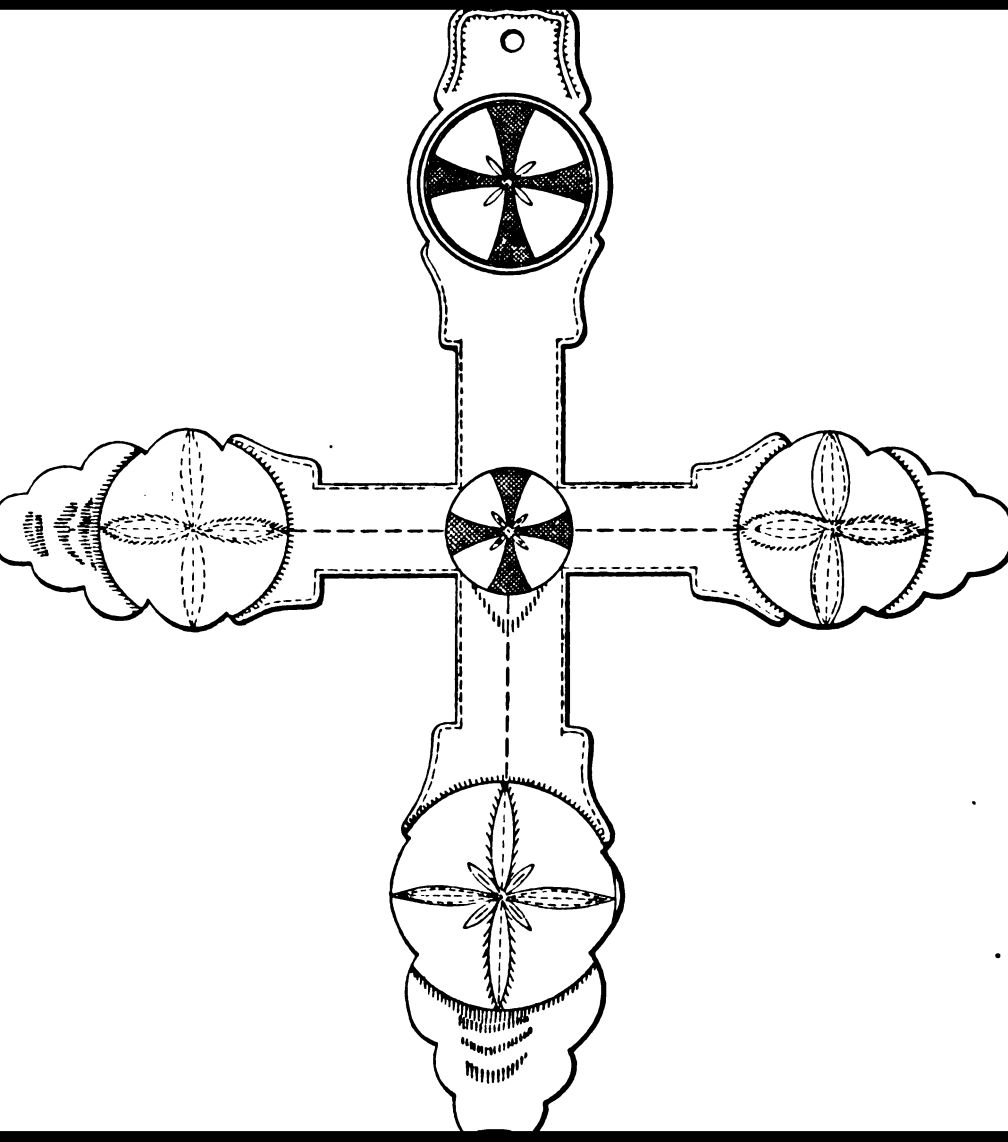

# ... Miscellaneous papers relating to anthropology

Otis Tufton Mason

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6
LANEOUS PAPERS
TO ANTHROPOLOGY

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# MISCELLANEOUS PAPERS

RELATING TO

# ANTHROPOLOGY

PREPARED UNDER THE DIRECTION

OF

PROF. OTIS T. MASON.

FROM THE SMITHSONIAN REPORT FOR 1881.

WASHINGTON:
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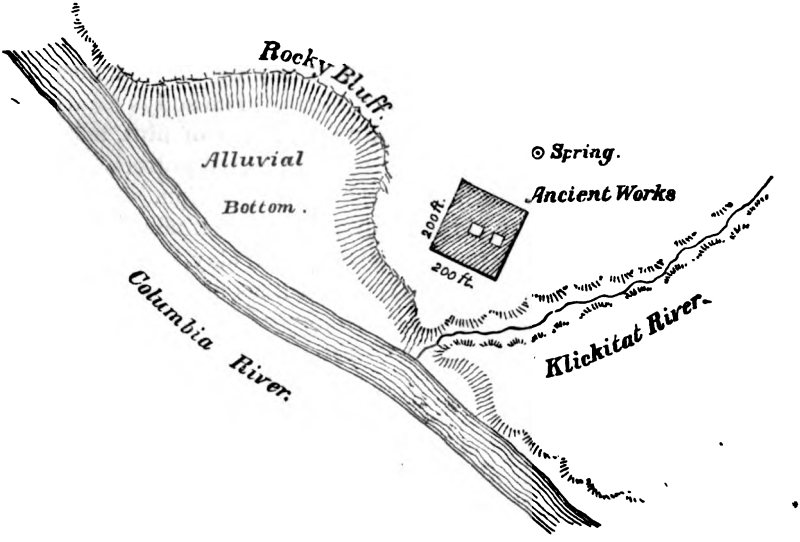
# MISCELLANEOUS PAPERS RELATING TO ANTHROPOLOGY.

## ABORIGINAL WORKS AT THE MOUTH OF THE KLIKITAT RIVER, WASHINGTON TERRITORY.

By T. M. Whitcomb.

The works represented in the accompanying sketch consist of a stone wall 5 feet high, filled inside with earth, except the two squares within. These are 8 feet deep and 15 feet on each side, the whole work being about 200 feet on either side. There was formerly some kind of wooden structure on the stone wall, as the remains of cedar timbers occur at certain points on the top. The wooden work was evidently destroyed by fire, since all the cedar is charred.




None of the Indians in this country have any knowledge of the builders or of its use. There is a tradition among them that it was finished a long time ago. Large quantities of arrow-heads are found in and about the works. The place is eminently adapted for defense, being 100 feet above the river. The scarcity of aboriginal works of apermanent character on the Pacific coast makes this an object of peculiar interest to the archæologist.



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## MOUNDS NEAR EDWARDSVILLE, WYANDOTTE COUNTY, KANSAS.

By E. F. Serviss, *of Wyandotte City, Kansas.*

On the farm of William Kouns, on the Kansas Pacific Railroad, near Edwardsville, Wyandotte County, Kansas, 14 miles west of this city, there are four mounds that have never been explored. They are situated on the third terrace of the valley of the Kansas River, about one-half mile from it, near a small creek. There is a very large spring about 200 yards northeast, and a smaller one about 300 yards northwest. On approaching the mounds from the east we find them extending in a straight line in a due westerly direction. They are about 6 feet in height, 25 feet in diameter, about 50 feet from each other at the base, and of uniform size. They have been somewhat injured by cultivation, the ground having been plowed twice. The soil is a black loam. Before the clearing of the land the mounds were covered with a heavy growth of timber, principally oak, and the stumps now remaining would indicate great age, averaging from 3 to 4 feet in diameter. A large number of axes, celts, arrow-heads, and other implements have been found in the immediate vicinity of the mounds.

About two years ago I discovered on the farm of J. L. Stockton, 1 mile northwest of this city, remains of an aboriginal workshop or village. It is located on a small stream, called Jersey Creek, and near a large spring. It covers an area of about 2 acres. The soil is sandy, and to the depth of 2 feet is a complete mixture of flakes of flint, ashes, bones (both animal and human), fragments of ornamented pottery, broken and unfinished stone implements of nearly every description. The fragments of pottery are the most numerous; there are three kinds as to color; viz, black, brown, and red, composed of a mixture of clay, sand, and pounded shells. The variety of the combinations of lines and dots is inexhaustible. I have never found two pieces alike.

Judging from the degrees of curvature of the fragments, the original vessels were mostly globular, and would hold from one-half pint to one quart. I found a very small vessel, containing powdered bone or lime; it was globular in shape, would hold about one gill, and was profusely ornamented. There are no deposits of flint and other stone valuable for arrow-making, &c., in this vicinity. The axes, celts, skin-dressers, and balls are all made of porphyry, and the arrow-heads of flint.

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## ANTIQUITIES OF MILLS COUNTY, IOWA.

By Seth Dean, *of Glenwood, Iowa.*

Mills County is located on the extreme western boundary of Iowa, and is the second county from the southern boundary. Immediately prior to its settlement by the whites it was the home of the Pottawatomie

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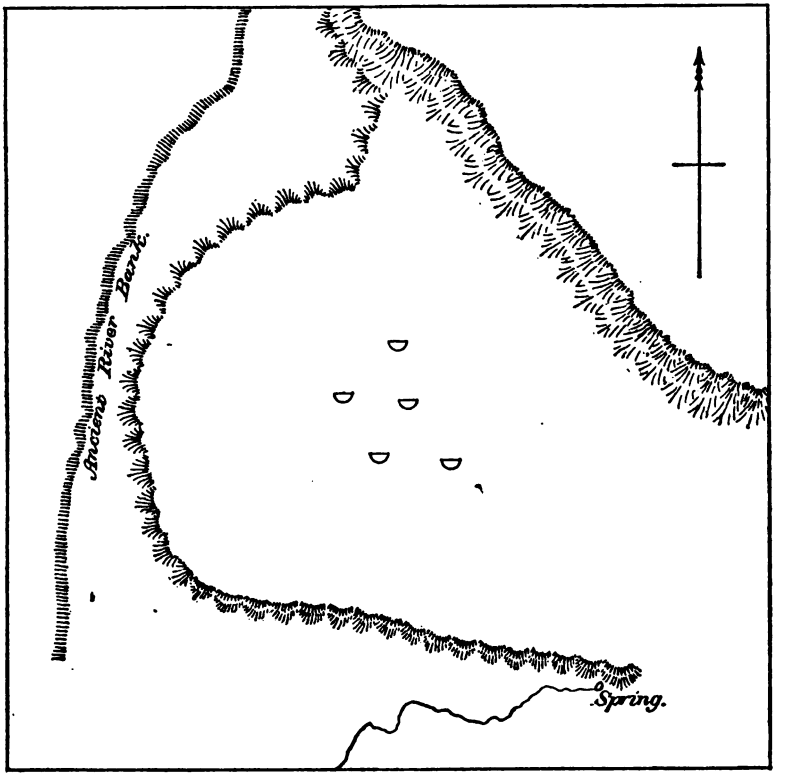
Indians, numerous traces of whom may still be seen, but the two places to which this article refers seem to have an earlier date. The sketch marked No. 1 is a point in the southeast corner of the southwest quarter section 8, township 73 north, range 43 west of the fifth principal meridian, and on the lands now owned and cultivated by Mr. O. E. Allis. Topographically considered it is located on a spur of the bluffs




Sketch No 1.

which form the eastern boundary of the great Missouri flood plain, and is perhaps 50 feet above the level of the plain. The remains at present consist of a number of circular depressions on the southwestern slope, but near the summit of the aforesaid point of bluff. To the south about 400 feet there is at present a deep ravine, from which flows an excellent spring of water, while east and north the range of bluffs rise to a height of 250 feet above the plain. The depressions are from 20 to 30 feet in diameter, of circular form, and at present are from 1½ to 2 feet deep, but as the ground has been in cultivation for a number of years, it is probable that they have been filled up considerably.

The ground on the site and for some distance around these hollows is strewn with small chips of stone and fragments of pottery, together with occasional tools of various kinds, such as arrow-heads, knives, &c. Also a number of pieces of different-colored paints and occasional orna-

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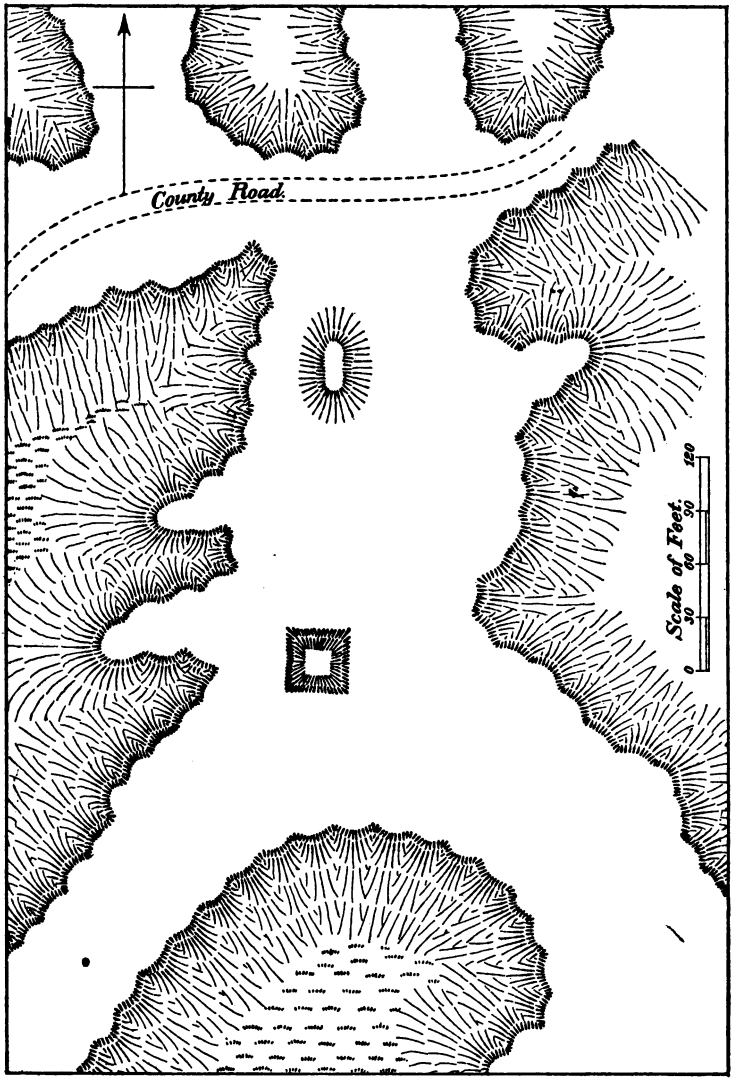
ments have been found. The inhabitants seem to have understood the manufacture of pottery to some extent, as numerous fragments show. The clay for this they obtained in the bank near at hand. This was probably mixed with the lime of powdered clam-shells, and then molded




Sketch No. 2.

into shape, and probably the larger vessels were supported by wicker-work made from small twigs, as there are numerous specimens which seem to show such an arrangement, although no perfect vessels have been found here, nor is it certain whether the vessels were baked in the fire or not.

The writer thinks the inhabitants lived mostly upon the products

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from the water, as the shells of the fresh-water clam are numerous, and were obtained from the Missouri River, which at that time probably flowed along the foot of the bluff, at their very door.

The stone for their implements seems to have been obtained in part from some ledges near here, and perhaps some of it from a distance, as the finer and more perfect of their tools were made from a kind not found here, except in the form of pebbles or drift bowlders, all the native stone being a carboniferous limestone, with the exception of a very coarse flint which is met with in some localities, and which was used for the larger tools, but which apparently was not suitable for smaller implements. Chalcedony seems to have been used by them to some extent, as were other kinds of stone of which the writer does not know the name. Some of these tools show superior skill, and have been apparently first chipped into shape and then ground to a perfectly smooth surface. This is the case with some hatchets which have been found, also of a globular stone which the writer has in his collection, and which was probably used as a sling-shot or for a similar purpose.

Sketch No. 2 shows the location of a peculiar mound, which is situated on the summit of one of the highest of the range of bluffs which borders the Missouri River flood plain. It is near the northwest corner of the northwest quarter of the southeast quarter section 10, township 72 north, range 43 west of the fifth principal meridian, and is about 5½ miles south and 2 miles east from No. 1.

This bluff is nearly 300 feet above the lowlands, and overlooks the country for many miles in every direction. The mound in question was formed of the soil adjacent, and is at the present time about 8 feet in height above the original surface. The base of the mound is elliptical in form, being about 70 feet north and south, and 40 feet east and west. The earth from which this mound was made was apparently taken from a place 125 feet south, where a large depression exists, about 35 feet square, and at present 5 feet deep. There is the stump of a burr-oak tree 16 inches in diameter standing near the northwest corner of the pit, on the edge of the slope of the bank; also another burr-oak stump 14 inches in diameter near the southeast corner, which is also on the bank, but at the edge of the excavation. This mound was partially opened some twenty-five years ago, but without yielding anything of consequence. My note-book shows the following entry: "Opened mound with S. B. Proudfit, November 25, 1879, and dug a hole 6 feet long and 4 feet wide. At 7 feet from the surface came to a layer of ashes about one-half an inch thick, and below this a layer of stones. These stones were from 2 to 11 inches thick and would probably weigh from 20 to 30 pounds. They were evidently placed on what was the original surface of the ground, and the ashes and earth placed above them. The stones were probably brought from the Nebraska side of the Missouri River. About 4 miles directly west the characteristic fossils in the stones indicate this. There did not seem to have been any

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action of fire on the stones, so far as we could discover, neither were there any bones or implements found in the mound, although we dug down 3 feet below the layer of stone. There were a few chips of flint found on the ground around the base of the mound, and a large stone implement which the writer thinks may have been used for a hoe, but belonged to a later tribe than the one which built the mound." (See Fig. 1.) Two cemeteries are also found in the county, but no examination has as yet been made.

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## DESCRIPTION OF MOUNDS AT SNAKE DEN, NEAR SALEM, HENRY COUNTY, IOWA.

By W. V. Banta and John Garretson, *of Salem, Iowa.*

There are many unexplored mounds in Henry County, Iowa. The group examined and here described are 3 miles west of Salem, in section 22, on land owned by Mr. Joel Jones, at a place known as the Snake Den.

1. The first one in the group is 8 feet high, and 20 feet in diameter. It was opened by the authors, but nothing of value was discovered within. A burr-oak 26 inches in diameter was growing on the summit. The land slopes gradually westward to Little Cedar Creek.

2. Sixty feet from No. 1 occurs a burial mound nearly level with the surrounding surface and 20 feet across. It is covered with flat rocks. (A large quantity of bones of all sizes were encountered, but none of them were whole, and some appear to have been burned.)

3. No. 3 is 60 feet from No. 2. It is 3 feet high. It was not very thoroughly opened. In it was found one body, lying at length, between flag-stones, the head toward the north. The bones were badly decayed.

4. This mound is the usual distance from the last mentioned. Indeed, to avoid repetition, it is a remarkable fact that each of the mounds in this row is just 60 feet from the preceding. This mound was 3 feet high and 20 feet in diameter. It was but partially opened, and three skeletons were found, badly decayed, lying at length, the heads to the north.

5. The fifth mound in the series is 5 feet high and 20 feet in diameter. The top was covered with smooth, flat rocks, arranged in the shape of an elongated hexagon or coffin lid, with stones set edgewise around the border. Five feet beneath the top, that is, on a level with the natural surface, two bodies were lying at full length, the heads toward the north.

6. The sixth mound was not opened. It is 30 feet in diameter and 5 feet high.

7. The next in order, No. 7, is also 5 feet high and 20 feet in diameter. It was only partially explored, revealing a few human bones. On the top there are two trees growing, one of them 2 feet in diameter.

8. No. 8 is 5 feet high and 30 feet in diameter. It had been opened

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previously to the visit of the authors. It is said to have contained a stone vault, in which were discovered human crania, &c. These were very badly decayed. A sandstone mortar and arrow-points were also found. The burial seems to have been in a sitting posture.

9. The first eight mounds are in a right line, but No. 9 is 60 feet east of No. 8. It was 5 feet high, and yielded nothing upon exploration.

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## MOUNDS IN RALLS COUNTY, MISSOURI.

By George L. Hardy and Fred. B. Scheetz, *of Monroe, Mo.*

The only ancient remains in Ralls County, so far as known to the writers, are what are commonly called mounds. They are located on Salt River, a western tributary of the Mississippi, passing through townships 55 and 56, in ranges 5, 6, and 7 west of the fifth prime meridian.

The mounds are invariably found within less than a mile of a stream affording a permanent water supply. They are always in the bottoms or on the crests of bluffs and ridges, bordered either by the streams or the bottom lands, mostly by the latter.

It is impossible to state what changes have taken place in the course of the streams since the erection of the mounds, but doubtless in some places they have been very great. The growth of timber is universally the same on the mounds and in the surrounding forests.

Occasionally a single one is found, but they are almost invariably in groups, numbering from 3 to 10, and sometimes more. Commonly they follow the crest of the ridge, but when they occur in the bottoms or on a level bluff they are found in direct lines or in gentle curves, extending generally east and west. They exist in large numbers in almost every bottom and on nearly every bluff, on both sides of the river, throughout the entire county, as well as on its branches near the main stream.

The mounds are usually circular in ground plan, and rise above the present level from 2 to 12 feet. They are composed either wholly of earth, wholly of stone, or of the two combined. Where stone was used at all, the plan seems to have been first to pave the natural surface with flat stones in one or two thicknesses for a foundation. In one case the stones were thrown together indiscriminately. Peculiar constructions will be more fully noted in the descriptions given below of mounds examined by the present writers.

The stones were procured from the beds of the neighboring streams or from beneath the bluffs. Rarely can it be determined whence the earth was taken, there being only one example where there was any indication of the removal of the earth in the vicinity.

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Human remains are almost invariably met with, only one exception being noted. The bones are generally very much decayed, though each bone is found almost entire, except those of the head. This seems to have always rested on a stone, and to have been covered by one or more, so that it is always found in a crushed condition. In stature the skeletons indicate a variation from 5 to 6 feet. No jaw-bone or even a fragment of one has been found from which the teeth were missing, and of the scores of teeth recovered there has been but one decayed, a wisdom tooth still in place. The teeth invariably indicate mature or advanced age. The human remains found in mounds constructed wholly of stone are generally much more decayed than those in mounds of mixed material. In rare instances stone implements, pipes, &c., are taken from the excavations, but these are more frequently picked up on the surface at no great distance from the remains.

So far as known, no accounts have been published concerning these mounds, nor have any systematic examinations been made.

As the stones used in their construction were of a kind useful to the early settlers in walling up their wells, laying foundations, building chimneys, &c., nearly all such material has been removed, so that it is rare to find a mound that has not been disturbed to some extent.

Since all the bottom lands are now in cultivation, those in such locations have been plowed down for many years. But where they are tolerably large and built principally of stone, as is generally the case, they are still well defined. Those that are situated on timber lands have the same growth of trees upon them as in the surrounding forests, if they are composed wholly of earth. In some cases white-oaks 2 feet in diameter or more are found on the very summit as well as on the slopes.

In the southeast quarter section 6, township 55, range 5, owned by Mr. J. Brashear, on the right bank of Salt River, is a row of mounds on the top of the bluff, which rises precipitously and then slopes back to the interior. There are twelve of them, the three southern ones being in a cultivated field, the others in the native woods. They vary in distance from 20 to 70 yards and in size from 20 to 50 feet in diameter, and in height from 2 to 5 or 6 feet. Except the south one they are of mixed material. That was wholly of stone, which was mainly removed by Mr. Brashear some forty years ago, when he commenced his improvements. He found in it a single human skeleton of large size. The fourth from the south was examined by us a few weeks ago by digging a ditch about 3 feet wide through its center. It is 58 feet in base diameter, and at the center 5½ feet above the general surface, having several white oaks growing upon it as large as any in the woods. The base was of flat limestone, thrown together without order; above this a layer of earth, another of stone, and so on to the top. No relics were found except a small fragment of pottery, a portion of a globular-shaped vessel, the inside of which was coated with a

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greasy soot, which smutted one's hand like lamp smoke. This was found about 3 feet below the surface. Many such fragments have been, and some can still be, found on the field before spoken of. There was no indication of any decayed substance anywhere to be detected, nor of any action of fire, except on some of the limestones, which had evidently occurred before they were placed in the mound. The earth in this mound appears to have been taken from a portion of the field about 160 yards distant.

Southeast of the house of Mr. Robert M. Spalding, in the southeast quarter section 36, township 56, range 6, about 1 mile from the left bank of the river is a row of mounds, the western one of which was composed of stone of a peculiar color, only found in the vicinity on the right bank of the river at the distance of nearly 1 mile.

On the southeast quarter section 35, township 56, range 6, we opened a mound, one of several on the top of the ridge. On the south side of it the bed stone had been formed into a shallow trough. On removing the flat stones which covered this, and which showed no action of fire, we found a bed of charcoal several inches thick, both animal and vegetable, and the limestone which composed it was burned completely through. Some fragments of a human femur were found in a calcined state. There was no indication of fire elsewhere in the mound, but there were the partial remains of several skeletons, lying in two layers, with stone and earth between them. The implements marked with Mr. Spalding's initials were found in his vicinity, and are sent by him.

On the west half of the southwest quarter section 4, township 55, range 6 west, owned by Mr. Utterback, a row of mounds, four in number, is found, commencing on the brow of the bluff and extending back in nearly a westerly direction, in a slight curve for about 250 yards, at irregular distances. The eastern one is much the largest. The others are all in a field which has been cultivated for thirty years. One was examined and opened. Fragments of human bones were found on the surface, thrown up by the plow. On the north and south sides single skeletons were found, laid at length east and west, and between the two a confused mass of bones, as though a number of bodies had been thrown together indiscriminately. The diameter of this mound was about 30 feet, its height about 2½ feet above the general surface. It was composed of earth and stones.

On the northeast corner of section 8, township 55, range 6 west, owned now by W. Keithley, a mound was opened by one of the present writers (G. L. H.) in 1853. It was on the brow of the bluff, about 50 feet in base diameter, and at the center 5 to 6 feet high, and made wholly of stone; near the middle lay a single skeleton, indicating a person 6 feet 4 inches in height. It was extended at full length, with head to the west. A dry wall was laid up around the remains 1½ feet high, and this covered with large flat stone, on which the remainder were thrown indiscriminately.

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Near the northwest corner of section 18, township 55, range 6 west, is an isolated conical hill, called the "Round Knob." Its crest is a narrow ridge about 150 yards long, on which are four mounds. The northern one was much the largest, and forty years ago portions of a dry wall still were standing, 4 to 5 feet in height. Human remains were found in all these mounds.

In section 24, northeast quarter, township 55, range 7, and on the opposite side (the left) of the river, is a similar but smaller hill, called "Wilson's Knob." Its crest is about 120 feet long, completely covered with stone to the depth of several feet, the pile being about 20 feet wide. On examination, made recently, it was found to have been originally a row of burial-places, nine in number, circular in form, each from 8 to 9 feet in diameter (inner measure), contiguous to each other. The remains of the walls still stand to the height of about 20 inches. Judging from appearances, it would seem that each had been of a conical or dome-like form. They were composed wholly of stone, and the remains found in them were almost wholly decomposed.

On the top of an opposite ridge to the west is another row, four in number, similar to those just described, except that the cists are square instead of circular, the sides being equal to the diameter of the former. In these also only small fragments of bones could be found. These last have been examined within a few days.

On the left bank of the river, about 1 mile below the "Round Knob" above referred to, are what are known as "The Painted Rocks," a number of rough representations of the human figure, about 20 inches in height. They are drawn on the face of the bluff, which overhangs so as to afford almost complete protection from the weather. This bluff rises 180 to 200 feet above the bed of the stream, and these drawings are 60 or 70 feet below the top. At the foot of the bluff are large masses of fallen rock and earth, filling up between the river and the bluff, and rising within 30 feet of the drawings. The central human figure is somewhat larger than the others, who are represented as approaching him in Indian file.

A single mound was found on the northwest corner of the southwest quarter section 12, township 55, range 7, on the point of a secondary ridge, near a small northern tributary of Salt River. It contained two skeletons, one with the head east, the other west. Beneath one of these a trench had been dug and filled up with stone, on which flat stone had been laid, and on which last the body had been placed.

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## MOUNDS IN THE SOUTHERN PART OF PIKE COUNTY, MISSOURI.

By Joseph C. Watkins, *of Ashley, Mo.*

There are mounds in this section known as "Indian graves." The time of their construction antedates the settlement of this section by the whites. Some of the oldest citizens suppose that the mounds were the burial places of the Sacs and Foxes, but they say the mounds appeared as old when they first came here, sixty years ago, as they do now. I have found no one who ever saw or heard of the construction of one of these mounds. There are no other indications of a former occupation of this region by the aborigines that I have ever seen. The mounds visited by me are located in the southern part of Pike County, Missouri, as follows:

One mound on the land of L. M. Wells, southwest corner of the northwest quarter section 34, township 52, range 3 west, about 1½ miles southwest of Ashley; one on what is known as the "House Land," about the center of the southwest quarter section 28, township 52, range 3 west, about 2 miles west-southwest of Ashley; one on the land of James Farquar, northwest corner of the northeast quarter of the northwest quarter section 10, township 51, range 3 west; three on the land of E. G. Collins, near the southwest corner of section 16, and about 1 mile southeast of New Hartford; two on the land of Benjamin Young, northwest corner of the northwest quarter section 24, township 51, range 3 west; three on the land of John Motley, near the southeast corner of section 24, township 51, range 3 west, and near the junction of the creeks North Cuivre and Indian, and nearest the post-office of Louisville, Lincoln County, Missouri; two on the Coperhaver farm (now occupied by Nunc Estis), about 2½ miles south of Louisville, Lincoln County, Missouri.

All the mounds in question are situated on high points of land, forming bluffs to the creeks Cuivre and Indian. At the foot of the bluffs are good springs. Back from the bluffs the surface is undulating and tillable.

Three of the mounds are isolated, six in groups of threes, and four in groups of twos. All the mounds are circular. They are composed of soil and rock, some with the dirt and rock alternating, some of clay, with vaults of rock in the center. In the center of some there are rectangular vaults containing remains and soil. The material was probably obtained near by—the rock from the ravines and the soil from the banks of the same. Eight of the mounds have been partially explored—all of the Collins group, both of the Benjamin Young group, and Nos. 1 and 2 of the Motley group; also one of the isolated mounds on L. M. Wells' land.

In No. 1 of the Collins group the remains of two skeletons were found, with some fragments of pottery. In No. 2 of same, in a rectangular

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vault, 4 by 5 feet, were found the remains of eight skeletons, with a few pieces of pottery. In No. 3 of same, a vault made of flat rocks, in the shape of a coffin, containing a few pieces of cranial bones, very much decayed. In No. 2 of the Young group nothing was found. In No. 1 of same, a large vault, the dimensions of which we did not have time to determine, contained human remains, much decayed, among which were found three flint arrow-heads, a small vessel molded of clay and burnt, and a pipe carved out of steatite, having upon its front a figure-head. In No. 1 of the Motley group bones were found, and among them a piece of pottery which shows some attempt at ornamentation, and a peculiar rock, oblate-ellipsoidal in form, with depressions (central) on its opposite sides. Around these depressions are 36 marks, arranged in groups of threes. All seem to have been diminished in altitude by continued exposure to the elements.

Trees were growing upon all the mounds, but some of them have been cleared. On the apex of No. 1 of the Motley group an oak tree had grown 22 inches in diameter, but was blown down, and now lies in the last stages of decay. Large oak and hickory trees have grown upon the other mounds.

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## ANCIENT ROCK INSCRIPTIONS IN JOHNSON COUNTY, ARKANSAS.

By Edward Green, *of Clarksville, Ark.*

Five miles north of Clarksville, Johnson County, Arkansas, in section 7, township 10 north, range 23 west, is situated a cavern, or rock house, as it is commonly called, rather remarkable for its shape and the inscriptions on its walls. This cavern is in the southern side of a solid mass of sandstone that crops out on the crest of a hill, which rises some 200 feet above a small stream that flows by its southern base.

The cavern presents the appearance of having been worn out by the action of running water in some remote geological period, and in shape approximates a quarter section of a sphere. It is about 50 feet wide, 25 feet deep, extending into the rock, and about 10 feet high.

A partition, or rather two pillars of rock, descending from the dome or roof to the floor, divides the cavern into two chambers, of which the western, or left-hand one as you enter, is three or four times as large as the other. This partition divides the entrance into two semicircular apertures, which, together with the high, bold, and retreating mass of rock above, give it the appearance of an enormous skull buried to the orbits in the earth. This, together with a peculiar resonance produced whenever the floor is forcibly struck, must have caused this place to be held in reverence and awe by the superstitious aborigines. The cavern is somewhat difficult of access, and could have been easily defended in time of war.

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On the walls of the larger chamber curious characters have been cut into the rock to a depth varying from one-fourth to one-half inch, by some blunt instrument in the hands of an unskillful sculptor.

Upon my last visit to this interesting spot, with the assistance of Mr. C. E. Robinson, of Clarksville, Ark., I succeeded in tracing these characters on paper, which I afterward reduced to one-sixth the size of the originals, by means of the *camera lucida*, thus preserving their true outlines and proportions; a traced copy of which accompanies this article.

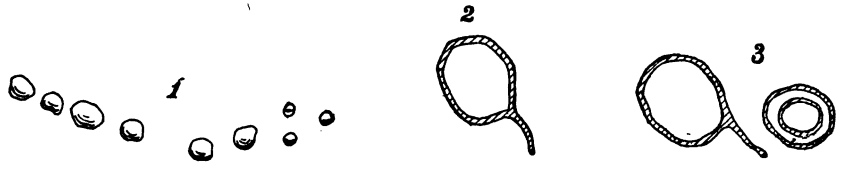
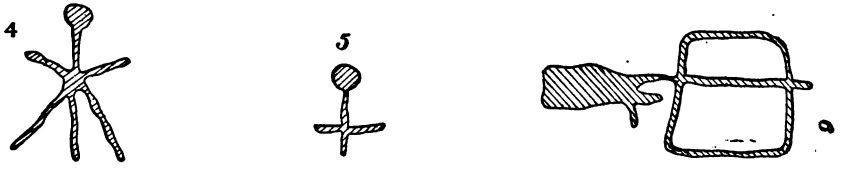



Fig. 1 represents hemispherical depressions or holes in the floor of the cavern, near the left entrance and a few inches from the wall. They are arranged in an arc-shaped row, with concave side to the wall.

Fig. 2 and the first character in Fig. 3, which occur above Fig. 1, on the wall, are incised circles, each 7 inches in diameter, and have each a single ray pointing downward and to the right. The other character of Fig. 3 consists of two concentric circles, the outer one measuring 5¼ inches in diameter, and the inner one 3 inches.




Figs. 4, 5, and 6 occur to the right and at about the same height as Fig. 3. Fig. 4 measures from top to bottom 11½ inches; Fig. 5, 7 inches, and Fig. 6, 23 inches.

Fig. 7 is a double character. The one on the left may represent the antler of a stag, the other a bow. The whole figure from left to right measures 23½ inches.

Fig. 8 is a rayed character with a circular body chiseled out to the depth of the rays, viz, one-fourth inch. The body of this figure is 4½

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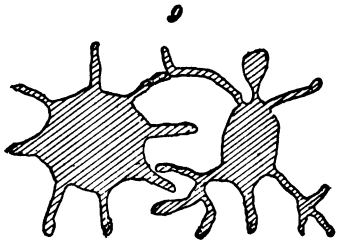
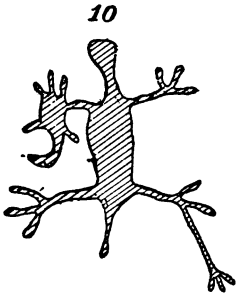
inches in diameter, and the length of its rays about 2½ inches. One of the rays connects with a similar but smaller figure.

Fig 9 is also a double figure; the first character is like Fig. 8, but larger and has one ray less. The body of this figure measures 7½ inches

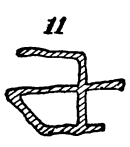


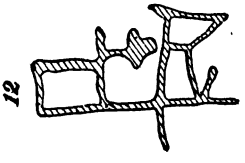




in diameter, and the length of the rays from 2 to 3 inches. The second character represents some reptile, as the tortoise, and measures from head to tip of tail 13 inches. The bodies of these figures, like Fig. 8, are cut to the depth of one-fourth to one-half inch.

Fig. 10 is another double object and might have been intended by the unskillful sculptor to represent a lizard with its prey or young. The smaller figure is reversed. The larger figure, from head to tip of tail, measures 15 inches; the smaller one, 7 inches.

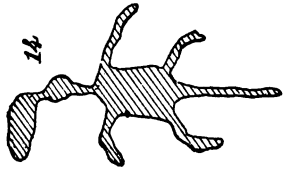
To the right of the characters represented in Fig. 10 are two charac-

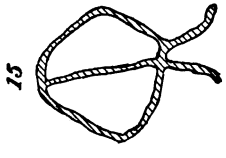


ters, Figs. 11 and 12, which are somewhat confused, and were difficult to trace, as they are surrounded by a multitude of indistinct lines and cuts. The sculptor had perhaps spoiled his figure and tried to obliterate it.

Fig. 13 are small irregular depressions in the wall of the cavern, to the right of the character represented by Fig. 14.



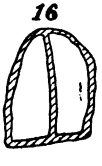



Fig. 14 is another reptile, with a peculiar swell on the neck and an elongated head. The length of this figure, from head to tip of tail, is 19½ inches.

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Figs. 15 and 16 occur still further to the right, and appear to be of a more recent period, and cut with a better instrument or by a more skillful sculptor.

In the rock floor of the smaller chamber is a round hole 19 inches in depth and 7½ inches in diameter at the top, and about 4 inches at the bottom; probably used for a mortar by the ancient cave-dwellers.

On the roof or dome there are several figures, as represented by Fig. 17, that have been painted on the surface of the rock and are now faded to a pale gray.

I found no spiral figures of any kind here, which occur so frequently among inscriptions of this character in other localities.

No stone implements of any kind, except a few broken pieces of arrow-heads, have been found in the vicinity of this cavern.

The sculptured characters here described are undoubtedly of ancient origin, and the only ones that have been discovered in Johnson County. However, I have been informed that similar inscriptions occur in Newton and Carroll Counties, of this State.

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## MOUNDS AND OTHER REMAINS IN INDEPENDENCE COUNTY, ARKANSAS.

By A. Jones, M. D., *of Caddo Gap, Ark.*

In the fork of White and Beach Rivers, Independence County, Arkansas, is a collection of mounds 2 or 3 miles each way in extent. They are 4 or 5 feet high, and laid out in rows in a semicircular form, about 6 miles above Jackson.

There is another group south of Suspension Rock, half a mile south, laid out in the same way.

On section 17, township 5 south, range 21 west, are two mounds 7 or 8 feet high, sunken at the top. Near by are depressions whence the earth for the mounds was taken. These have never been explored. They are on a piece of upland that has been cultivated and each had large trees growing on the summit. They stand about 2 miles from the Caddo River. There are two shell-beds near by, constructed of the common mussel, in which the coarse clay and shell pottery is found.

Four miles north of Amity, section 17, township 5 south, range 23 west, are several shell-heaps on a high and second bottom of the Caddo, entirely above overflow.

Another mound is in the Caddo Cove, 2 miles west of Black Springs, on the old Major Farr place, now owned by Dr. Gray. It is 5 feet high and has been explored. A depression 80 yards distant is the only spot in the vicinity whence the material of the tumulus could have been derived.

There are several shell-heaps on a high table-land bordering on the

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Washita, in this county, 4 miles southwest of Cedar Glades, on the land of Robert Hansley. Fragments of pottery occur about the heaps. The beds are 40 feet above high water, indicating that the shells must have been carried to the spot.

On the south fork of Washita, section 24, township 2 south, range 26 west, near Mount Ida and at the upper ford of the creek, human remains, partly washed out, were discovered. The bodies were buried in a recumbent posture, the head to the west. The bones were too friable for preservation, the teeth alone remain firm. Forty years ago the ground was covered with a dense growth of cane. The bottom is a high one and above overflow. Many human remains have been plowed up in the vicinity. The cemetery must be about 200 to 300 yards long, and 75 yards wide. Near by, running east and west, are severals small mounds, in the largest of which a former owner, Mr. Powell, was buried.

Three miles east of this point, in a bottom-land owned by Reuben McKenney, were plowed up the remains of a very large man. Pottery has also been found in the same vicinity.

On section 9, township 4 south, range 24 west, is an outcrop of novaculite or flint of a very tough quality and of various colors. From this material large quantities of arrow-heads, &c., have been formed. The ancient artisans went down on the south side of the outcrop, which is a ledge 700 or 800 feet above the adjacent valley, and carried away immense quantities. The material is the same as that of arrow-heads from Tennessee, Mississippi, and westward.

There is on Capt. R. S. Burk's farm, section 17, township 5 south, range 23 west, evidence of an extensive workshop in arrow-heads and cutting implements. The arrow material was taken from the quarry above described, although ten miles away. The cutting instruments were of the hatchet kind and made from a species of iron ore. There is another *atelier* near my home, section 7, township 4 south, range 24 west, Montgomery County, Arkansas.

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## MOUNDS NEAR THE NATIONAL HOME, MILWAUKEE COUNTY, WISCONSIN.

By George W. Barber, *of the National Home, Wisconsin.*

The mounds described in this paper are on land owned by Joseph Carey, nearly opposite the Dewy place (adjoining John R. Goodrich's farm), now occupied by E. P. Bacon. They are about one mile west of Milwaukee City limits, on the south side of National Home avenue, and on the west side of the Trowbridge road. The two that have been removed were upon land owned by William Trowbridge, lying south of and adjoining Carey's land. Two are in Wauwatosa township, two in Greenfield, and all are in Milwaukee County, Wisconsin. They are situated upon a swell of land from 20 to 100 rods distant

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from what was once a shallow pond or lake. The land occupied by the lake has been partially drained within a few years, and is now a meadow. The surface around the mounds is covered with soil from 12 to 18 inches deep, and might have been used for cultivation. William S. Trowbridge and other old settlers have said that there are, or were a few years ago, hillocks or marks of Indian cornfields in this vicinity, and that they have seen Indian corn growing, planted by the Indians. The land to the west has been partially drained. There is no apparent arrangement of the materials. The center of the mound is not different from other parts. The material was probably obtained around the mound, as the soil is deeper under it than at its sides. All have been explored. I have taken bones from two of them, and have been told that pottery and bones were found in the other two. I have one good skull from No. 2, and leg bones, vertebræ, ribs, &c., from No. 1. No account of these mounds has ever been published, to my knowledge. Nos. 3 and 4 have been entirely obliterated for purposes of cultivation. No. 2 has been dug into. No. 1 is fast being undermined to obtain gravel for the streets of Milwaukee. For two years past I have watched with sad interest the destruction of this grand old monument of a decayed race, and secured the bones as they were exposed. It now presents a perpendicular section, running nearly through the center, of which a photograph might easily be taken. A maple and a red-oak tree grew upon the mound, each 18 inches in diameter. There are two red-oak stumps within two or three rods of No. 1, 3 feet across the shorter, and 3½ feet across the longer diameter. Judging from the soil around them, these trees must have grown since the mound was built. I have counted the annual rings of growth of one, and found them to number 155. I assisted in taking out of No. 1 the fragments of three skulls, and other bones of three skeletons. The skulls, vertebræ, and hip-bones of each skeleton were on about the same level, and in a space not more than 15 inches square. In one case the crown of the skull was downward, and the top on a level with the hip-bones. This position at first puzzled me, but I suppose that the body was buried in a sitting posture, and the superincumbent weight of the earth, as it settled and the flesh decayed, turned the top of the head downward by the side of the body, and it continued to descend until it reached the level of the hips. The faces, judging from the position of the legs, were toward the west. The bodies were not inclosed. One skull was quite well preserved, but the other bones were considerably decayed.



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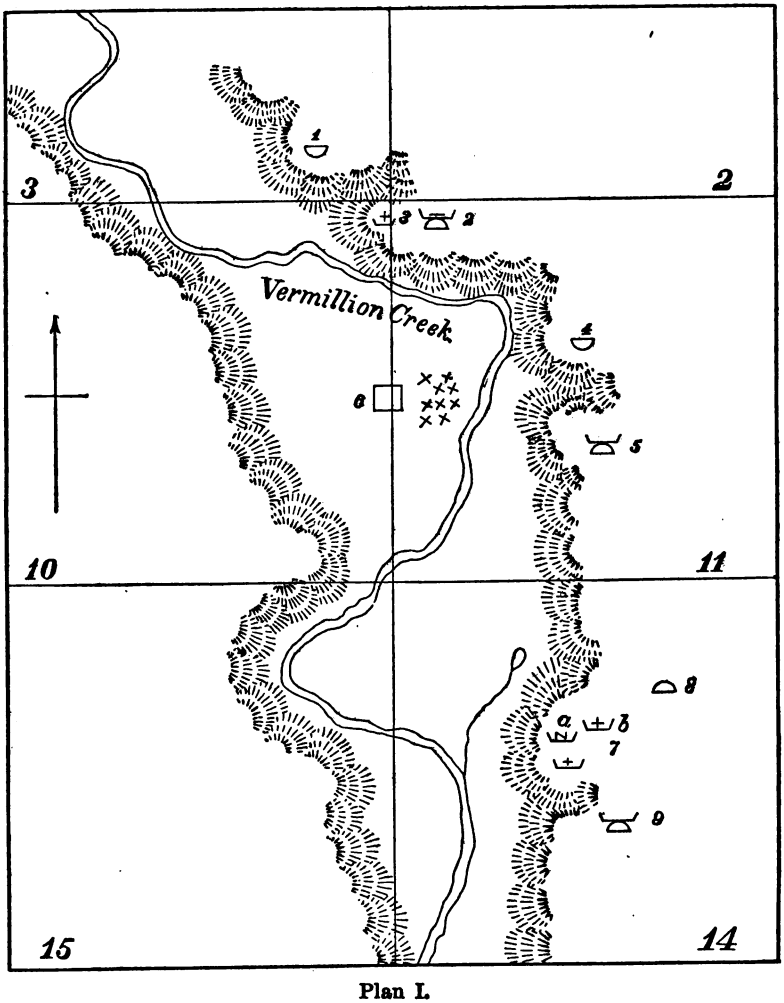
## EXPLORATIONS IN MOUNDS IN WHITESIDES AND LA SALLE COUNTIES, ILLINOIS.

By J. D. Moody, *Mendota, Ill.*

The explorations noted in Plan I, were made at different times in company with Dr. Everett, of Troy Grove, and Dr. Edwards, of Mendota, Ill. Those noted in Plan III, were made in company with Prof.




Plan I.

Samuel Maxwell, of Lyndon, Ill. The "find" noted in Plan II, was made by some workman while digging for gravel.

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The location of Plan I is about 4 miles in a southeasterly direction from the village of Troy Grove, La Salle County, Illinois. It is about 10 miles north of the village of Utica, on the Illinois River, near which was situated the great town of the Illini Indians, famous in the early history of Illinois.

All of the mounds discovered were situated on the bluffs on the eastern side of Vermillion Creek, a small stream flowing into the Illinois River.

No. 1 was a circular depression about 12 feet in diameter and 1 foot deep at the center. On trenching it we found evidence of a long-continued fire-place in the baked clay, burned stones, and fragments of charcoal, evidently the site of an Indian's fireside.

No. 2 was a mound 15 feet in diameter and 4 feet high, occupying a commanding position on a high bluff projecting out into the valley. The view from this point is a fine one, commanding the valley for miles in either direction. On opening the mound we made the following discoveries: In the center and just under the sod we found a great quantity of burnt bones, human and animal,—the latter those of dogs or wolves. From a careful examination of the fragments of skulls, we determined the remains of nine individuals. There was no evidence of fire in the soil. They had been placed there in comparatively recent times after having been elsewhere cremated. Along with these bones were found a few perfect arrow-points, numerous fragments, and a rude stone pipe fashioned somewhat like a spool.

On digging deeper, just below the original surface of the ground, was found a skeleton lying upon its back, with the feet toward the west. It was of an individual of average height and advanced in years, as indicated by the absorption of the alveoli and the angle of the inferior maxillary. The arms were extended along the body. The frontal development of the skull was of a low order, more so than is found in the Indian, and yet not so much so as is usually ascribed to the mound-builder. This was the only burial in a horizontal position discovered in this locality. A very careful examination of the soil about the head and upper parts of the body failed to bring to light any relics whatever. The burial was in a compact dry clay, and the bones in a crumbling condition.

No. 3 was a burial place on the point of the same bluff just spoken of. Nothing but bones were found in it, the remains of several individuals. One skull was taken out in good condition, lacking the inferior maxillary. The bones still preserved quite a portion of the animal matter, and indicated a comparatively late burial, presumably Indian.

No. 4 was a circular depression but a few feet in diameter, evidently, from the burnt stones, being a fire-place.

No. 5 was a mound about 10 feet in diameter and 2½ feet high. It had been opened a short time before our visit and a few bones taken

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out. From the description we received we could form no idea as to the character of the interment. No implements of any kind were found.

No. 6, on a broad flat in the bend of the creek, is the remains of an Indian encampment; numerous fire-places just beneath the surface of the ground, broken flints, &c., being found.

No. 7 is a group of three mounds. Having been plowed over for years, they were nearly obliterated. The remains in mounds *b* and *c* were alike, each containing the bones of several individuals thrown in promiscuously. They were not burned, yet each mound contained great quantities of ashes and bits of charcoal. The bones crumbled on the slightest touch, and presented the appearance of having been leached. In mound *a* one skeleton in tolerable preservation was found. It had been buried in a sitting posture. Near the head was found a large mussel-shell filled with what appeared to be paint. A little to one side and at bottom of excavation was an ash-pile with about one peck of charcoal in the center of it. Neither ornaments nor implements were found. This group was evidently Indian in origin.

No. 8 is a mound 35 feet in diameter and 5 feet high. Though regular in outline and occupying a commanding position, yet from our examination of its structure we considered its artificial origin as doubtful.

No. 9 is a mound 12 feet in diameter. In it was found one skeleton very much decayed, and near the head a very rude earthern bowl, holding about one pint.

No other mounds are found in the vicinity. Scattered over the bluffs and fields are found quantities of broken pottery, arrow-points, flint chippings, stone axes, &c. A copper spear-point was also found in the vicinity. From my examination of them, I assign to them an origin and date, with possibly the exception of the horizontal burial in No. 2, as of the Illini Indians, and of about the beginning of the seventeenth century.

Plan II is located 4 miles southwest of the city of La Salle, on Cedar Creek, a small stream flowing into the Illinois River from the south. There were three graves two and a half feet deep, on a gravel point projecting out from the ridge. No mounds had been erected over them. They were close together. They were discovered by some laborers while digging for gravel. One of them, possessing a little curiosity, gathered up the bones and relics. One body was deposited in each grave, and in a recumbent position. The relics found consisted of several simple, rude pipes cut from sandstone, a few shell beads, arrow-points, and the fragments of a curious vase, holding, when reconstructed, about four ounces, and representing a man sitting on his knees, with hands folded across the abdomen. The opening was at the back of the head. It was composed of clay and powdered shells baked. The face presents strongly-marked Aztec features, or possibly an exceptional Indian countenance. The bones were very much decayed, with the ex-

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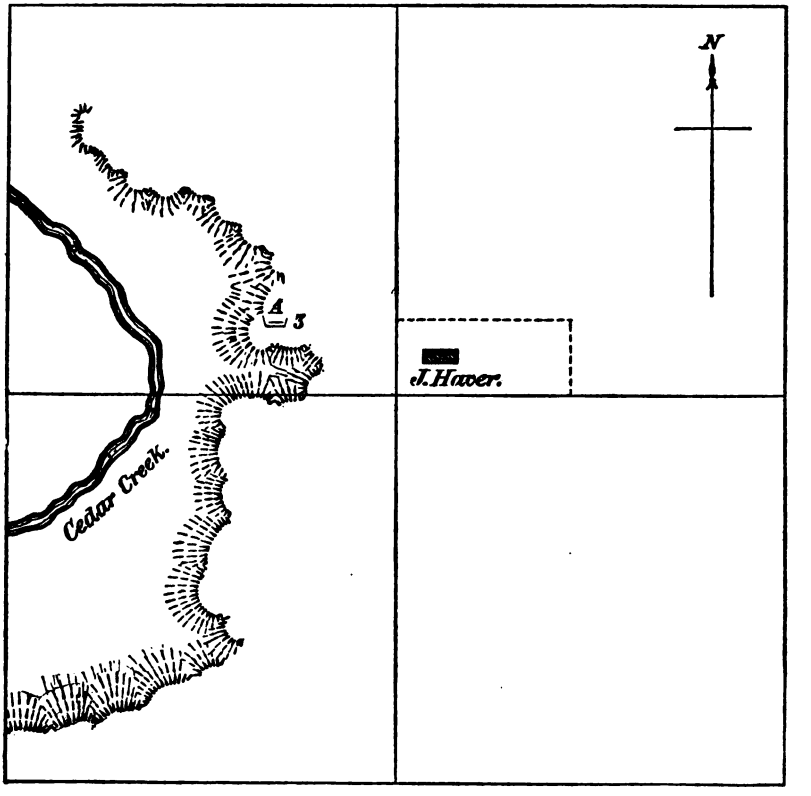
ception of one side of one inferior maxillary. This was well preserved, and stained a deep green color. Not understanding the import of this, the laborers missed finding a copper implement of some kind. No other remains were found in the vicinity.




Plan II.

Plan III is a singular group of mounds 3 miles from Spring Hill post-office, Whiteside County, Illinois. The bluffs along Rock River are covered with mounds. This group, however, is on the alluvial bottom, about 30 rods from the river. Though there may be others on the lowlands, yet these are the only ones I found so situated. This group is in a semi-circular form, in quite regular lines, as will be seen by a reference to the plan. They are on a plat of ground a little higher than the surrounding level. They are surrounded on three sides by a slough, in earlier times probably communicating with the river, and this may have had some influence in shaping the crescent form of the arrangement. However, being on the ground, the impression cannot be resisted that there was some special design in the grouping.

While most of the mounds were round and of varying size, some of them were long and narrow. The figures inside the circles indicate the dimensions of the larger ones in paces (2½ feet to the pace). Their rel-

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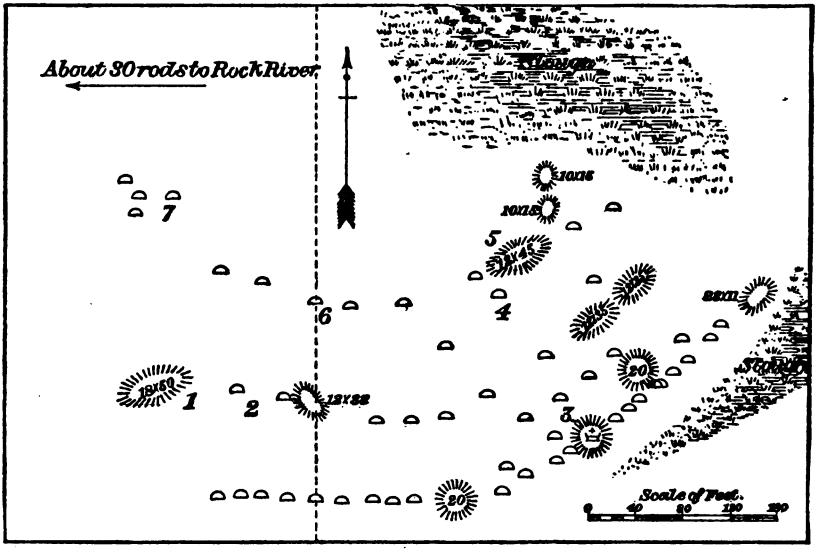
ative sizes are preserved in the diagram. The ground is covered with timber. A stump standing on one of the mounds indicated an age of over two hundred years. The soil was a very hard, sandy clay. The




Plan III.

space A of the diagram was inclosed and used as a hog-lot. None of the mounds were over three feet high. Nos. 1, 5, 4, and 7 were opened, but nothing whatever was found. In No. 2 we found no bones, but two rude vessels, holding about one quart each, made of clay and coarse sand molded on the inside of a grass basket and then burned, as evidenced by the impressions of the grass on the outside. No. 3 contained the remains of several individuals, lying side by side, but too badly decayed to be preserved. No. 6 had been bored through years before for a well; quantities of broken bones were brought to the surface. Our time did not allow of any further explorations. The regularity in the arrangement of the mounds presented a weird appearance in the forest. Some of the mounds on the bluffs opened at same time yielded the same results. On one a white-oak tree, three feet in diameter, was growing. Rude vessels and stone axes have been found in the neighboring mounds.

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# ANTIQUITIES OF FOX RIVER VALLEY, LA SALLE COUNTY, ILLINOIS.

By W. Hector Gale, *of Wedron, Ill.*

Having recently had the pleasure of examining a portion of the Fox River Valley, about 8 miles from Ottowa, the capital of La Salle County, Illinois, the author gives below the results of his investigations. The valley abounds in picturesque scenery of rocky bluffs and wide, fertile fields. The surface rocks are the Saint Peter's sandstone and Trenton limestone of the Lower Silurian. The drift in many places is 40 feet in thickness, consisting of a bluish clay, very hard, which, when undermined, breaks into blocks with the regularity of stratified rocks.

The Fox River passes along the eastern side of the valley in this locality, and is, in ordinary times, very shallow and rapid. The stream has, in the remote past, covered the entire valley, about one-half a mile in width. The ground is eminently historical as being the region which was explored by those intrepid *voyageurs*, La Salle, Tonti, Marquette, and Joliet, also the scene of the almost romantic extermination of the Illini Indians by the Iroquois. Within a radius of a few miles, and especially within this immediate locality, were enacted some of the most sanguinary scenes of the Black Hawk war.

But relics of a still older people are unmistakably visible here. It may be well to add that the course of the river here is from north to south. Perpendicular bluffs, of Saint Peter's sandstone, rise along the eastern shore, which are washed by the waters of the Fox, even at low water, while along the western side of the valley are sloping bluffs from 20 to 60 feet above the river. My experience during the late war teaches me that, were an enemy expected from the south, this locality, on account of its natural advantages, would be fortified and made a very strong place. It would seem that this fact was not lost sight of by the prehistoric inhabitants. On the west side of the valley, on a point of the bluff highest above the valley, I find an earthwork commanding the surrounding country, and facing toward the east and south. The bluffs are divided from those south by the Indian Creek, which enters the Fox about one-quarter of a mile distant, coming from the west, and has cut out a valley from that direction. The general shape of the fortification may be seen by an examination of Fig. 1. The large mound at the corner is highest, rising some 5 feet above the natural surface of the ground. Some time since, an excavation was made in the center of the mound, and a few bones found, but they had perished to such a degree that it would be impossible to describe any of its characteristics in an intelligible manner. On either side of the mound referred to is a smaller one, about 2 feet in advance of the main line, giving a passageway, gate, or entrance on either side, yet not leaving space entirely open and unprotected. In the rear of the fort, Fig. 1, is a thick second growth of oak

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and hickory. Immediately in front there are very few trees, but whether they have been removed by the builders of the earthwork, by a more modern race, or have never existed, I am unable to state. The valley,

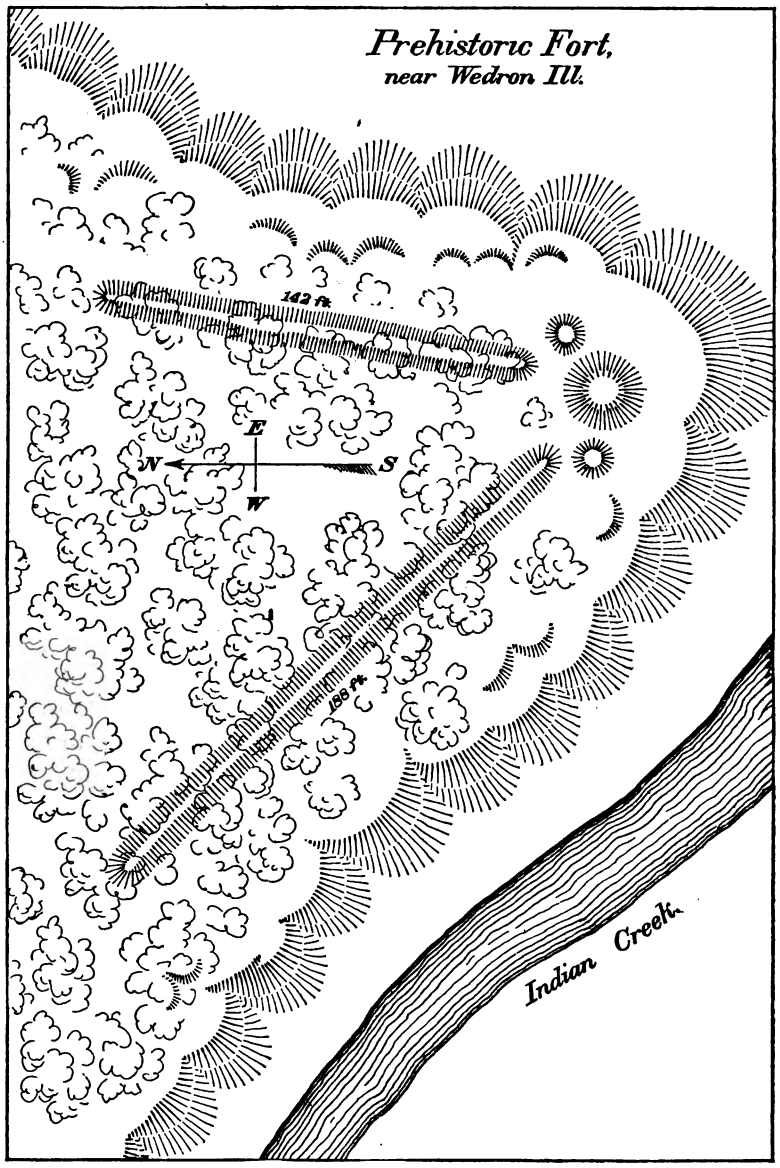


FIG. 1.

before cultivation, was a succession of mounds, crowded closely together, and the remains of many are still plainly visible. Some of these have been excavated, and in most cases found to contain skeletons, which, upon being exposed to the air, rapidly crumble away. In some cases stone

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axes made of syenitic rock were found, and in one instance two earthen vessels or jars of rude workmanship. Across the river, in an easterly direction from the fortification just described, is another fort, facing in the same direction. This was surveyed by Col. D. F. Hitt, in 1877, and from this I take the drawing (see Fig. 2). The sand-rock is from 35 to 40 feet perpendicular above the river, and on the eastern side of the bluff is a ravine 65 feet deep, nearly vertical. The earthwork extends from the bluffs on the river side to the bluffs on the western side of the ravine.

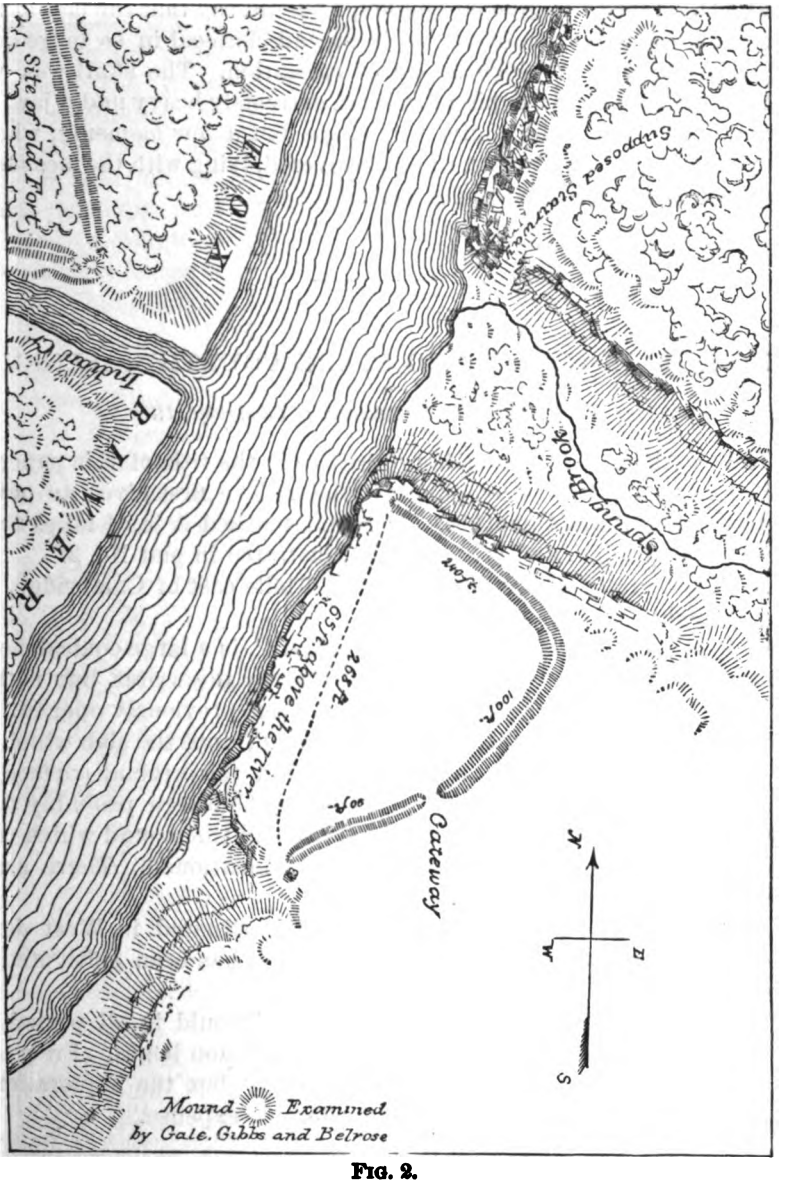


FIG. 2.

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In my examination I discovered a mound about 80 rods south of the fort which bore no evidence of ever having been disturbed, and, in company with Mr. J. I. Gibbs, of Vermont, and Thomas Belrose, of Wedron, Ill., gentlemen interested in archæology, made an examination of its contents. About 2 feet from the surface we discovered charcoal in quite large quantities, and the skull, thigh bones, a fragment of the collar bone, and one joint of the vertebra of what had once been a member of the human family. Underneath was a number of granitic bowlders of quite large size, placed in a circular form, inside of which was found charcoal. Were I to give an opinion, I should say that the fact of finding but a small portion of the skeleton and charcoal in so large quantity is conclusive evidence to me of cremation. The skull was very narrow, with a rapidly sloping forehead, extremely heavy under jaw, and large teeth. The skull retained its shape but a few moments, when it crumbled in pieces. It was, when discovered, lying with the face nearly downward, and the head to the east.

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## MOUNDS IN HENRY AND STARK COUNTIES, ILLINOIS.

By T. M. Shallenberger, *of Cambridge, Ill.*

The locations of the mounds referred to in the title of this paper are indicated on the two accompanying plats. The first gives an outline of Henry and Stark Counties. The point marked A is 1½ miles southwest of Cambridge, and is more fully illustrated in plat No. 2.

At B is a group of fourteen mounds, 1 mile east of Cambridge, still unexplored.

In Peoria County, at the location marked C, is a large conical mound on the river bottom, which was excavated by the writer, but nothing of value was found, inasmuch as it had been previously opened. No doubt a body had been interred in this mound, since the slab which had lain over it was still there, and the ground at the original surface was burned hard. Two other flat stones close by had been probably taken from the mound, there being no other stones in the mound which could have been used to support the slab before mentioned. There are no other mounds in the vicinity.

At D is a mound still unexplored. It is situated in West Jersey Township, and is yet 4 feet high, although it has been cultivated for several years.

The point marked E is a salt marsh, and would in all probability yield relics of prehistoric salt works and mastodon bones. Fragments of pottery have been discovered here already, but the exploration of this spot would be attended with considerable expense.

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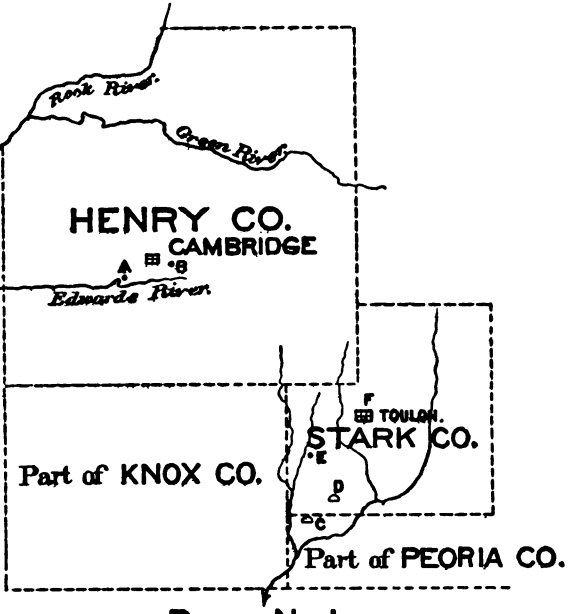
In the corporation of Toulon, marked F, from a very low mound were taken two axes and some white flakes like enamel. Judging from the deposits, as well as from the mold, a body had been interred here.

In the northeast of Henry County, at a point marked G, are immense sand-hills and swamps. The mound-builders evidently made this a rendezvous for game and fish, the sand-banks abounding in all kinds of relics. This is the Winnebago swamp, and scattered through it are many evidences of ancient inhabitants.

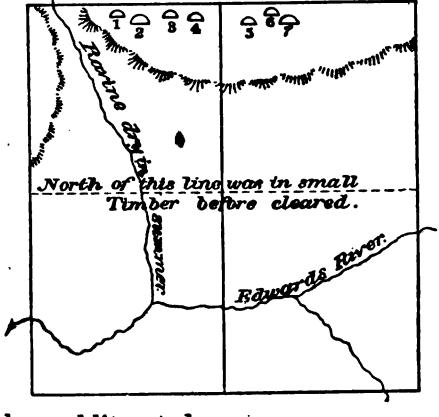



PLAT No. 1.

As mentioned above, Plat No. 2 is in enlargement of point A in Plat 1. The mounds will be described in the order of the numbers in the figure.

1. The mound was opened and a polished agate was found, about the size and shape of a hen's egg, but more pointed. Both this mound and No. 2 are still covered with timber.

PLAT No. 2. 1 MILE SQUARE.




3. Nothing but ashes was found in the bottom of this mound.

4. At the bottom, the stump of a crab-apple tree was discovered, which had been felled by a blunt-edged tool. Another tree had grown on the surface of the mound, and the roots completely surrounded the ancient stump beneath. Another mound formerly located at this point has since been obliterated.

5, 6, 7. Permission to open these could not be obtained.

All the mounds mentioned in this paper are about the same size, 30 feet across, and 2½ feet high, and are built of material found on the spot. The last named are on the land of Peter H. Nilson.

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## ANTIQUITIES OF KNOX COUNTY, ILLINOIS.

By M. A. McClelland, *of Knoxville, Ill.*

The drainage of the eastern and southern part of Knox County, Illinois, is accomplished by numerous small streams navigable in the spring for canoes. Their general course is toward the southeast to empty into Spoon River, a tributary of the Illinois. In the northwestern part of the county numerous other small streams have their rise, and, running to the west, finally empty into the Mississippi. The portage between the headwaters of these streams is only a few miles in extent.

The trails anciently followed by the aborigines have now entirely disappeared, but along their former course, and upon the bluffs of the streams, are still found implements of war, amusement, and the chase. The discoidal stone, stone hatchet, and arrow-points sent to the National Museum were all found upon the north bluffs of Court Creek, principally upon sections 13, 14, 15, 16, township 11 north, range 2 east, Knox County, Illinois. The stone axes, and arrow-points came also from these sections, except the largest, which came from Haw Creek, section 3, township 10 north, range 2 east.

To all the interrogatories contained in circular No. 316 I return a negative answer, except as to mounds and cemeteries.

*Mounds and excavations.*—No. 1. One and a half miles west of Knoxville, on section 30, township 11 north, range 2 east, Knox County, Illinois, on the east side of a ravine running into Haw Creek, on a level piece of timber land belonging to Harvey Montgomery, esq., is a single mound 51 feet in diameter, and at the center about 3 feet above the general surface. The trees upon this land are of two ages, viz, first, large oaks, elm, &c., 2 feet 8 inches in diameter, and a smaller growth, of black-jack, and white oak, ash, hickory, &c., 6 to 8 inches in diameter. The mound is surrounded by six or seven of these larger trees, one on the southwest edge of the mound, the others, west, north, northeast, east, and south. east, at variable distances, from 20 to 32 paces. Upon the mound there are numerous trees, of from 3 to 6 inches, growing. There are very large areas of ground in this same timber, in which the larger trees are very sparsely scattered. The mound is circular in form, and 60 feet S. S. W. is a circular pond or excavation, about 40 feet across, from which, doubtless, much of the earth of which the mound is composed was taken. Within 60 feet of its western edge the ground begins to decline to form the ravine which carries the water from the adjacent praries to Haw Creek.

The mound had been dug into before, by whom I do not know, and I think nothing was found—at least that is the report. I cleaned out the former excavation, which was in the center, and about 4 feet across, enlarging it to 6 feet, carrying it at least 2 feet deeper, or 2½ feet below

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the general surface of the soil, and thence ran a trench 6 feet wide towards the west 10 feet. The composition of the mound from surface down was as follows: thin layer of humus; then yellow clay and humus mixed, becoming more largely mixed with humus as it reached the level of the surrounding country, this layer being 2 feet 10 inches; then a thin, light colored layer one-half an inch to an inch in thickness, which I suppose to be ashes of grass and leaves, as there was no sign of charcoal in any part of the layer; then a layer of a few inches thickness, similar to the surrounding soil; then a firm yellow clay, that had no appearance of having ever been disturbed. The ash layer was undermined to the extent of two feet on each side. It was found to lie horizontally and at about the level of the surrounding ground. Nothing else was found.

No. 2, on the southeast quarter of the northeast quarter section 16, township 11 north, range 2 east, Knox County, Illinois, is 36 feet across, and on the east side of a ravine that runs into Court Creek from the north. The land is lightly timbered. A quarter to a half a mile nearer Court Creek, however, there are some fair-sized trees (2 feet). The ground immediately surrounding has hazel brush and scrub oaks, black-jack, &c. In height the mound is similar to No. 1. Its envelopes are similar, but the ash layer contains decided traces of charcoal. Nothing found by a very positive excavation carried to the depth of 3½ feet below level of surrounding surface. In the fields around for a quarter of a mile a great many arrow-points have been found. The twenty-eight nearly or quite perfect ones sent in package to the National Museum were found within this area.

To the north and a little to the east, about 100 rods, there is a very high point of land, from the summit of which an extensive view may be had of the surrounding country. This hill is and has been for thirty or forty years under cultivation, and upon it arrow-points in large numbers have been found. There are places on it where the ground is white with flakes and chips of the same material as the arrow-points. The stone hatchet of Witterell's collection was found about 40 rods east of the top of the hill. Between this point and where the hatchet was found, the old trail running from Maquon, on Spoon River, to Henderson Grove, on the head of Henderson Creek, was easily recognized thirty years ago. Upon the eastern slope of this hill and upon both sides of the old trail, and upon the south slope, towards the mound, are found numerous deposits of small, mostly flat-faced stones. The stones are found now but 2 or 3 inches beneath the surface. These are so placed that their flat faces are on the same horizontal plane, and cover a space of a foot or two, with intervals of a rod or two between them. Many of them are reddish, as if some ore of iron might enter into their composition, which upon being heated had become changed to red. The stones present other appearances of having been subjected to the influences of fire.

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*Trails.*—Thirty years ago there were three distinct trails running across the country. One ran from Maquon, on Spoon River, to Henderson Grove; thence, in a northerly direction, to Galena, on the Mississippi. Another from the mouth of Court Creek, on Spoon River, to the same points. A third trail ran from Maquon north to strike the trail from mouth of Court Creek to Henderson Grove. These two trails met in township 11 north, range 3 east. Along these routes all the specimens sent you were found. Maquon was an Indian settlement on Spoon River. Here, within the memory of our oldest settlers, they had a village, and lived from year to year. There is an old Indian cemetery at this point and another at the mouth of Court Creek. Near the south line of Knox County, half a mile west of Spoon River, there is a group of three mounds, not yet examined, and half a mile further south, in Fulton County, there is another group of three, none of which have been explored.

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## DESCRIPTION OF A GROUP OF MOUNDS IN BUREAU COUNTY, ILLINOIS.

By A. S. Tiffany, *of Davenport, Iowa.*

The group of eight mounds described below and represented in the accompanying plan is situated near Bureau, in Bureau County, Illinois, on the bottom lands of the Illinois River and Bureau Creek.

The land on which they are located has been farmed about forty years, and the smaller mounds have been considerably reduced. Numbers 1 to 3 are situated on a natural swell, and the diameters can be determined only approximately. These three were explored by the writer and Mr. Sale.

*Dimensions and distances of the mounds.*

| No. | Diameter | Height. | Directions. | Distance. |
|---|---|---|---|---|
| | *Feet.* | *Inches.* | | *Feet.* |
| 1 | 50 | 30 | W. 20° N. to No. 2... | 90 |
| 2 | 50 | 30 | W. 20° N. to No. 3... | 100 |
| 3 | 50 | 30 | W. 45° N. to No. 4... | 120 |
| 4 | 70 | 36 | S. 40° W. to No. 5... | 185 |
| 5 | 80 | 48 | S. 25° W. to No. 6... | 210 |
| 6 | 70 | 42 | S. 25° W. to No. 7... | 240 |
| 7 | 90 | 66 | S. 25° W. to No. 8... | 210 |
| 8 | 80 | 48 | | |

A rectangular opening, 7 feet square, was made in mound No. 1. At a depth of 15 inches a bed of ashes several inches in thickness was reached, which extended in all directions beyond the opening. At a depth of 5 feet a few bones, much decomposed, were found. They were parts of two individuals. A small number of bone awls were lying near them.

A slight dip in the floor of the mound was observed in the northeast

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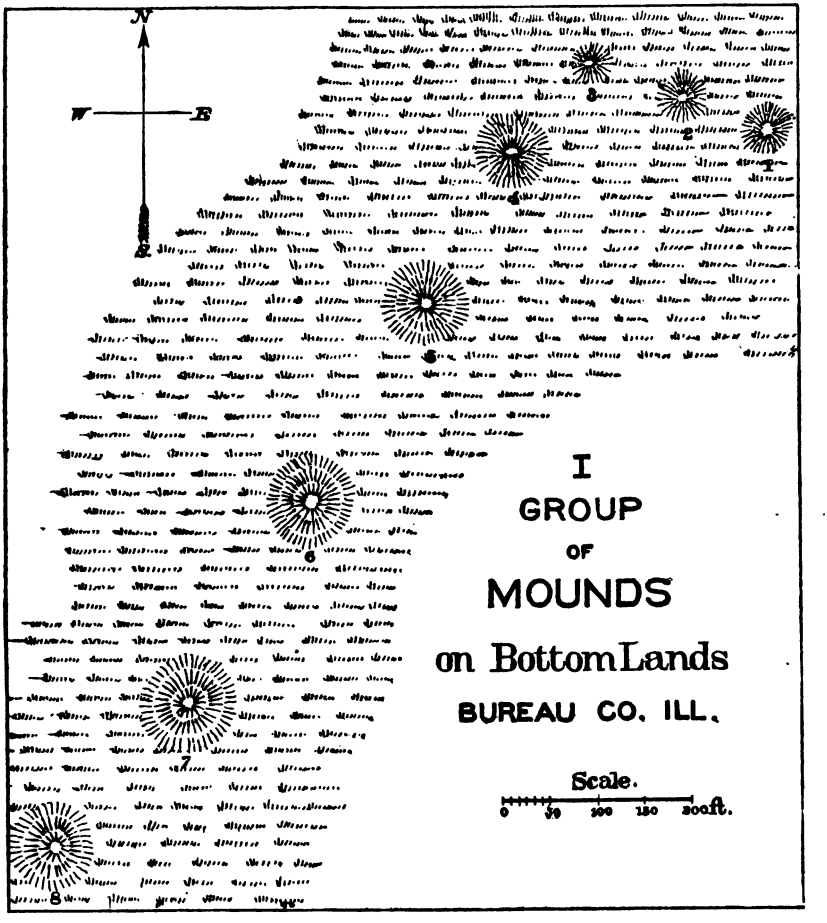
corner. The exploration was extended 9 feet further, making the entire length of the opening 16 feet. The remains of two individuals were found with their heads toward the north. Under the head of the individual lying upon the west side was discovered a porphyry crescent-




shaped implement of rare beauty. It is polished on both sides, and all its edges are nicely wrought. The perforation does not extend through the stone, being only .55 inchs in depth, but sufficient for mounting. A flint knife was deposited with the same individual, about where the right hand would naturally be.

At the northeast corner of this excavation, with some decomposed bones of the other individual, a bone awl or needle was recovered, about four inches in length, but a portion had been broken off. It was gracefully tapering and finely pointed.

A few pieces of pottery obtained were of the same character as that which occurs universally in this region. The crania were too fragile to

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be saved. A few unio shells and water-worn pebbles had been deposited in different parts of the mound.

In mound No. 2 the skeleton of a youth, much decomposed, was all that rewarded our labor.

In mound No. 3 no human remains or objects of interest occurred.

The second group of mounds surveyed are situated on the bluff at Bureau, Bureau County, Illinois. The measurements are given in the accompanying table:

| No. | Diameter. | Height. | Angle. | Distance from center to center. |
|---|---|---|---|---|
| | *Feet.* | *Inches.* | | *Feet.* |
| 1 | 18 | 18 | S. 20° W. to No. 2. .. | 18 |
| 2 | 21 | 30 | W. 20° S ..... | 33 |
| 3 | 21 | 20 | S. 40° ..... | 120 |
| 4 | 30 | 40 | W. 20° N..... | 50 |
| 5 | 30 | 36 | S. 40° W ..... | 130 |
| 6 | 21 | 18 | S. 40° W..... | 250 |
| 7 | 30 | 30 | S. 20° W..... | 150 |
| 8 | 36 | 36 | S. 40° W * ..... | 75 |
| 9 | 24 | 30 | S. 40° W..... | 39 |
| 10 | 21 | 15 | N. 20° W. ..... | 30 |
| 11 | 25 | 12 | S. 30° W ..... | 24 |
| 12 | 24 | 24 | W. 20° S † ..... | 66 |
| 13 | 27 | 20 | S ..... | 49 |
| 14 | 30 | 24 | ..... | 30 |
| 15 | 24 | 30 | E. from No. 13..... | 30 |
| 16 | 25 | 20 | S. 10° E ..... | 45 |
| 17 | 24 | 20 | W. 20° S..... | 57 |
| 18 | 27 | 30 | S. 20° W..... | 30 |
| 19 | 18 | 10 | S. 20° W..... | 24 |
| 20 | 24 | 27 | S. 20° E..... | 27 |
| 21 | 15 | 10 | S. 20° E‡ ..... | 30 |
| 22 | 27 | 48 | S. 40° W..... | 30 |
| 23 | 24 | 15 | S. 20° E§ ..... | 24 |
| 24 | 24 | 24 | S. 10° W..... | 78 |
| 25 | 20 | 24 | S. 10° E..... | to No. 25 |

* Explored; pebbles, cedar wood, decayed, and coal; one skull.
† Oak stump; 160 annular rings.
‡ Oak stump; 450 annular rings.
§ Large white-oak tree.

## MOUNDS IN SPOON RIVER VALLEY.

By W. H. Adams, *of Peoria, Ill.*

On what is usually termed a hog-back, on the north side of the Spoon River, 75 yards distant, 80 rods west of the east line and 20 rods south of the north line of section 12, township 11 north, range 43 east of the fourth principal meridian, is a round mound about 30 feet in diameter. On the highest point of the hog-back, at the surface, is some evidence of fire. The evidence of a former fire increases very rapidly. At a depth of from 12 to 16 inches five skeletons were found, of which nearly all the bones were calcined, and many of them entirely consumed by the fire. One of the skulls lay to the north, one to the northwest, one to the south-

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west, one to the south, and one to the northeast. With the bones were fragments of sandstone burned red; at or near each skull, and nearly on a line between the point of the shoulder and ear, was a water-worn

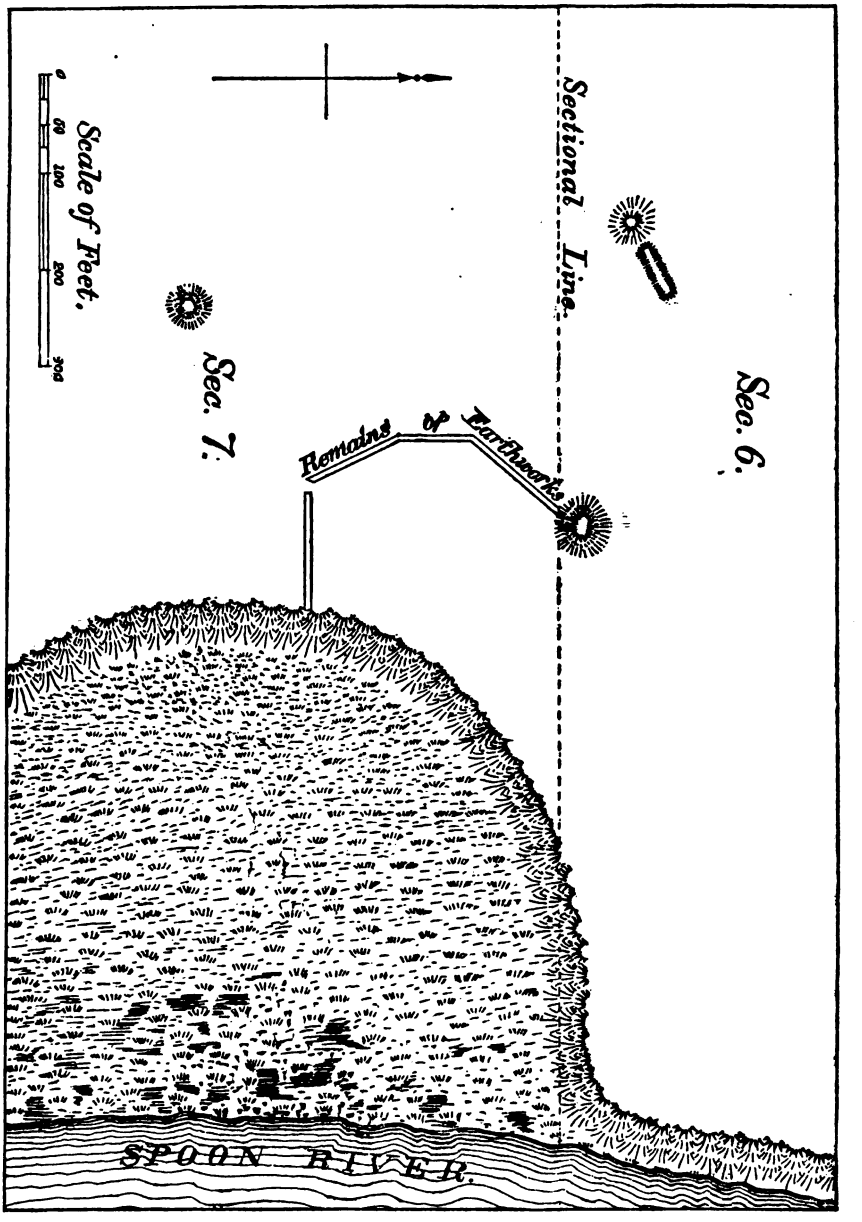


FIG. 1.

pebble, except in one instance, and in that it was an angular piece of flint. The pebbles had not been acted upon by the fire, so that they must evidently have been placed there after the intense heat had sub-



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sided. From the appearance of the earth one would be strongly inclined to believe that the fire in this instance had been one of unusual intensity. From the position of the skulls with reference to one another, the feet of one body would reach to the head of the next, if laid at full length. One of the skulls was rather thinner than those we usually find in other mounds. Some of the teeth evidently belonged to a person of great age, while others were very small, but I cannot say that they belonged to an infant. The skulls were in fragments, the largest piece obtained being about 2 inches square.

On another hog-back, east of the one described, commencing on section 12, township 11, range 4 east, and extending across the northwest corner of section 7, township 11, range 5, and also some distance on section 6, township 11, are thirteen common round mounds, varying in height from 18 inches to 5 feet. As far as examined these are burial mounds, and nineteen skeletons were found in one of them. This mound was 45 feet in diameter and 5 feet high. The bones in it were in a fair state of preservation. I opened four or five of this group, and in each were found pieces of trap-rock from 1½ to 2 inches square, pieces of burnt sand-rock, and small water-worn pebbles, which I suppose to be jasper or something of that character, and in the largest mound was discovered a very small fragment of red pottery.

On the high bluff between Spoon River and Walnut Creek, on the south line of the southeast quarter section 6, township 11 north, range 56, are three mounds of some importance. The first is a common round mound, 3½ feet high, with a base diameter of 40 feet. This mound is three rods north of the sectional line between sections 6 and 7, and 60 rods west of the east line of section 6. (The land is owned by Henry Jaques.) I opened this mound at the apex, and at a depth of 2 feet found quite an amount of ashes, also one piece of trap-rock of irregular shape, and about the size of a small boy's head; also a honestone arrow point of the leaf-shape pattern. Eight feet east of this is a mound 62 feet long and 19 feet wide, with the greatest length from southwest to northeast. I made a cross cut of this mound at the middle, and in the center found a bed of charcoal, 10 inches deep, intermingled with ashes. I also made an opening near the east end and found nothing. Twenty rods east of this, on the sectional line, is an oblong mound, measuring 64 feet from west to east, and 47 feet from north to south, with an apparent height, above the surrounding level, of 3 feet. I made an opening in the center of this mound, 4½ feet in diameter, and at a depth of 2 feet I found some ashes and fragments of stone which had been polished, and 3 inches of yellow clay. This clay has the appearance of having been rammed or packed while in a plastic state. Below the clay is a thin stratum of red paint, and below the paint were ashes and paint intermingled. In this material were found fourteen arrow points made of honestone, all of the leaf pattern except one, and this was 3½ inches long, with notches at the base, and had the appearance of having been used;

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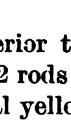
also a small piece of galena was exhumed. There was a slight depression on the surface above the deposit. I made an opening 9 feet east of the center, in which was obtained a copper awl or needle 3½ inches long, and three-sixteenths of an inch square, thick in the middle, and sharp pointed at each end. This copper implement was inclosed in some material, which, under a microscope of low magnifying power, has the appearance of being the bark of a tree. This tool lay with the points southwest and northeast. I also found a white-flint spear-point or lance-head, 4 inches long and 1½ inches wide, without notches at the base. We found the flint implement about 10 inches southwest of the copper. This was surrounded by the same red material as the first. We first made an opening 14 feet west of the center of this mound, and at a depth of 3 feet 8 inches we found one copper needle or awl, rounded and pointed; three copper beads one-quarter of an inch in diameter and three sixteenths of an inch in length; one piece of copper tubing or bead 1 inch in length and one-quarter of an inch in diameter; one piece of tubing or bead three-sixteenths of an inch in diameter and 1 inch in length; one piece 1⅝ inches in length and one-quarter of an inch in diameter; and five other pieces very much like those described; also a small fragment of a tooth supposed to be human, and several small flint pebbles.

There are traces of a breastwork or fort, commencing at the southwestern part of this mound, about 6 to 12 inches in height. Commencing at the mound it extends southwest 120 feet, thence south 67 feet, thence south-southeast 106 feet, thence to bluff of Spoon River 130 feet (the bluff is 40 feet high), from the mound to the bluff in a straight line southeast 186 feet.

All the arrow points were finely finished, and far superior to those found on the surface of the ground. This mound is 42 rods west of Spoon River. The bluffs here are composed of the usual yellow clay, and contain very little sand. On the northeast corner of the northwest quarter of the southeast quarter section 5 are three common round mounds, standing in a triangular position to each other, with the largest to the north, the next in size directly south of it, and the smallest to the east, somewhat like the following figure:



On or near the southwest corner of section 4, township 11 north of the base line 5, east of the fourth principal meridian, are a series of common round and long mounds of more importance than any other yet discovered in this part of Illinois. (See Fig. 2.) Commencing at a point near the foot of a long bluff sloping to the south, and 40 rods north of the south line of section 4, and 10 rods east of the west line, are three common round mounds. For convenience we have numbered these, commencing with the most westerly. The distance is reckoned from center to center of round mounds, and from end to end of long mounds.

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From 1 to 2 is 39 feet from center to center, from 2 to 3 is 30 feet from center to center, from 3 to 4 is 50 feet from center to center. This last mound is 80 feet long, with a cross mound at the center 33 feet long, 2 feet high, and 10 feet wide. The principal mound is 15 feet wide.

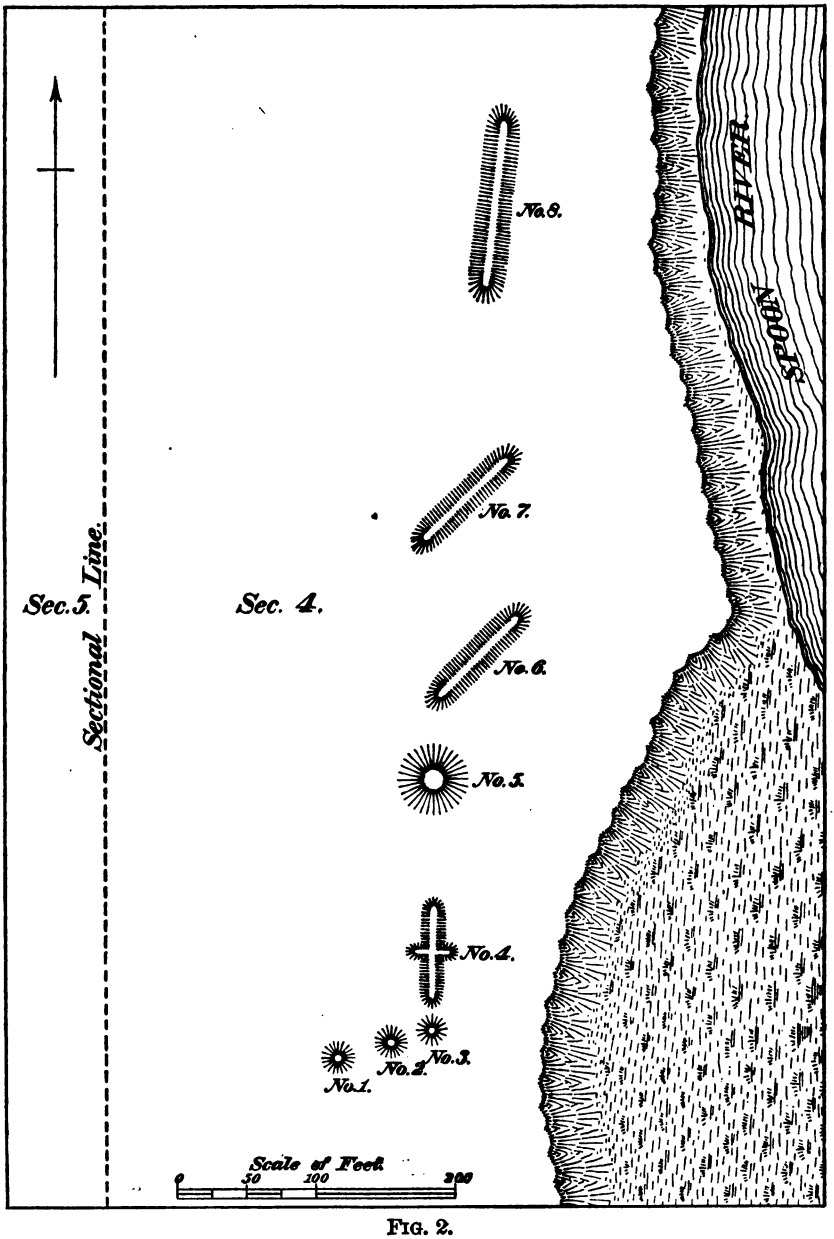


FIG. 2.

From No. 4 to No. 5 is 123 feet. No. 5 is a common round mound, 3 feet high, with a base diameter of 40 feet. No. 6 is 53 feet from No. 5, 98 feet long, 2 feet high, and 18 feet wide, with the greatest length from

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southwest to northeast. No. 7 is 75 feet west-northwest of No. 6, and is 104 feet long, 2½ feet high, and 18 feet wide, with the greatest length from southwest to northeast. No. 8 is 100 feet from No. 7, and is 140 feet long, 3 feet high, 20 feet wide. Fifty feet from the south end of this is a black-oak tree, 3 feet in diameter, standing in the middle of the mound. (In accordance with the usual rule in this vicinity of computing sixteen growths to the inch, measuring on one side of the center, this tree was nearly three hundred years old.) This mound is 100 feet west of the bluff of Spoon River. The bluff is 40 feet high at this place, and very precipitous. In company with Mr. W. J. Morris, I made a cross cut in this mound to the original soil. At every spadeful we would bring up flint chips, and we found several pieces of trap-rock, some of them being polished on one side. Around the mound where the surface is bare great quantities of flint chips are picked up. We made a slight examination of Nos. 6 and 7, and found nothing, excepting traces of ashes and charcoal. On opening No. 3, at a depth of 2 feet, we found ashes; at 2½ feet, 6 to 8 inches of charcoal and ashes; at 3 feet, hard-packed earth; at 3 feet 3 inches, two skeletons, all the bones very much decayed, except the teeth, and these were not worn, showing the owners to have been not over thirty years of age. We opened Nos. 1 and 2, and found nothing. All the mounds appear to have been built at the same time, by the same people.

Spoon River at this point is 100 feet wide. We found no depressions whence the material of which these mounds are built was taken.

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## BURIED FLINTS IN CASS COUNTY, ILLINOIS.

By J. F. Snyder, M. D., *of Virginia, Ill.*

Prof. Joseph Jones has well said that "the fabrics of a people unlock their social history; they speak a language which is silent, but yet more eloquent than the written page."

To every thoughtful person there is a peculiar interest in the remains of nations that have fulfilled their destiny, and passed away; and this interest grows to fascination when studying the works of art, however rude, of people who have disappeared, and left no other legible records of their history and characteristics.

The origin and language of the prehistoric occupants of this region may remain forever unknown to us, and their color and personal appearance be only conjectured; but their implements, utensils, and ornaments, which have escaped the ravages of time, when properly interpreted, repeople our hills and prairies with their ancient inhabitants, and tell us, in language as plain as the written page, the story of their domestic pursuits and arts of life; of their customs, superstitions, and habits of thought.

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In this view it is important that all discoveries of the remains, either of the works or the skeletons, of the aborigines, it matters not how insignificant, apparently, or how similar in kind they may be, should be carefully noted and accurately recorded, as each may possibly increase in some particular our knowledge of the primitive American tribes, or serve to confirm anew some fact of their history already known. Every stone implement, shell or bone ornament, and earthen vessel recovered, is a silent revelation of the past; and from this accumulated material the restoration of ancient life upon this continent is becoming annually more and more distinct.

It is well known to have been the custom of pre-Columbian Indians, as of their descendants in later times, to hide in the ground, for security until again wanted, stores of surplus provisions, and such implements and other articles as were not immediately needed or easy of transportation. Many of these buried stores of perishable materials, forgotten, or from other causes never recovered by their owners, soon totally disappeared; but others, consisting of objects wrought in stone, bone, and shell, are yet occasionally discovered in all parts of our country previously inhabited by the red race. These deposits are all full of interest, and some are wonderful for the surprising numbers, or weird beauty of design, or marvellous forms of the strange things they comprise.

Within the limits of this county two small subterranean long-hidden stores of flint implements have been recovered by the plow during the last two years. In the alluvial soil of Central Illinois, so destitute of surface rock, a stone of any kind turned up by the plow is of so rare occurrence as to at once attract the attention of any plowman, but unfortunately many valuable specimens so found excite but momentary notice and are again lost.

In the spring of 1880, Mr. George W. Davis, an intelligent farmer residing in Monroe precinct, 10 miles east of the Illinois River, when plowing one day in a field that, until a few years ago, had been covered with a heavy growth of timber, observed in the furrow his plow had just made a few sharp-pointed flints, and stopping his team to secure them, he found on examination that they formed part of a deposit consisting of thirty-two small implements, which had been carefully placed in the ground, on edge, side by side, with their points toward the north. They seem to have been buried near the foot of a large oak tree long since prostrated and decayed. This spot was on the crest of the ridge bounding the valley of Clear Creek on the south, and half a mile distant from a corresponding elevation on the north of the little stream, known locally as "Indian Hill," so called because the skeletons of several (supposed) Indians with stone implements, bone awls, glass beads, &c., were some years ago disinterred there in the process of grading a public road.

The thirty-two implements were presented to me by Mr. Davis. With one exception they are made of a cherty, muddy-looking siliceous

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stone, of grayish color streaked with white; a flinty formation occurring in all lead-bearing strata of Illinois, and identical with the cherty nodules and seams very common in the sub-carboniferous outcrops of the upper Mississippi and southwest Missouri. They had been buried new, showing no marks of having been used, and their peculiar style of workmanship and similarity of design leave but little doubt that they are the product of the same artisan. The exceptional one in the deposit is a well-proportioned and perfect spear point, nearly 3 inches in length, neatly chipped from opaque, milk-white flint, strongly contrasting in material, shape, and finish with the others, and evidently manufactured by some other hand, perhaps in a different and remote workshop.

Fourteen of the lot are of the laurel leaf or lanceolate pattern, pointed at one end and rounded at the other, with edges equally curved from base to point, averaging three-eighths of an inch in thickness in the mid-

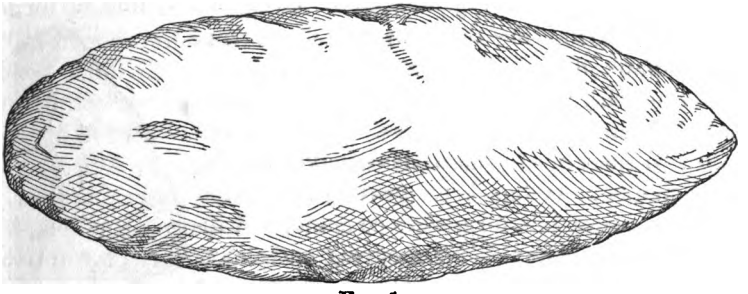

FIG. 1.

dle and evenly chipped to a cutting edge all around. They are uniform in shape, but differ in size; the smallest measuring $2\frac{3}{4}$ inches in length by $1\frac{1}{4}$ inch in width at the center; and the largest one is 6 inches long and nearly 2 inches wide. These fourteen are of a type quite common in all parts of the Mississippi Valley, and are supposed to have been used as *knives* or ordinary cutting tools. In our collection are six of these supposed knives, taken a few years ago from a deposit of over four hundred in West Virginia, and very similar in material, pattern, and dimensions to the fourteen now before me.

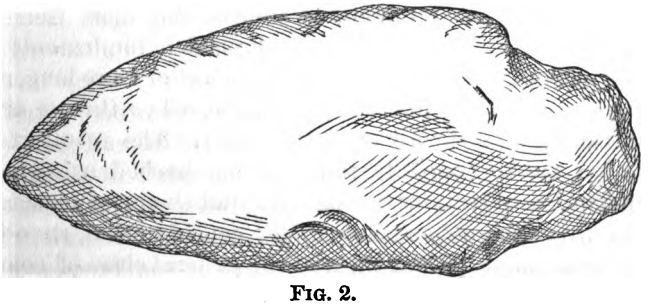

FIG. 2.

The remaining seventeen are shaped alike, but also differ in size as the first do, and are of the same average thickness. They too are sharp pointed at one end, but in outline from base to point their sides are un-

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equally convex, one being considerably curved and the other curved but little from a straight line, giving them an ungainly and lop-sided form. Their broad ends, originally rounded, probably, like the first fourteen, have been chipped away on each side for half or three-fourths of an inch from the extremity, forming a broad rudimentary shank. At first glance these objects would readily be mistaken for unfinished awkwardly shaped spear-heads; but slight examination proves them to be completed implements, all fashioned after exactly the same pattern, with one end pointed, a greater convexity of one side than the other, and the base which in the first fourteen is regularly rounded, in these has been slightly cut away on each side, perhaps to facilitate their insertion in some sort of handle. The greater rounding out of one side than the other in all cannot be accidental, or due to want of skill in the workmen who made them; and this odd design is not easily reconciled with the ordinary forms and uses of spear points. Occasionally flint arrow-points are found approximating this shape, one side from point to shank describing a slightly curved or straight line with the other side regularly barbed, or curved, as in the common types. In our collection are two specimens somewhat concavo-convex, or sickle-shaped. It has been gravely suggested that implements of this form were so made, and intended for use, exclusively for spearing and shooting fish, on the hypothesis that the greater weight of one side of the flint, or its irregular form, would give the shaft to which it was attached, when launched, a curved direction, thereby overcoming the water's refraction of the solar rays, and cause the weapon to strike the real and not the apparent position of the fish aimed at. In order to test this idea I made several experiments with the abnormally shaped flints. Securely fastening the one-barbed arrow-heads in straight, perfectly made arrows, I shot them with a strong sinew-backed Indian bow, at marks in the water and in the air, and found in every instance that the deformed flint had not the least tendency to deflect the shaft from its direct course. I then inserted some of the lop-sided implements from this Clear Creek deposit in light javelin shafts 5 feet or more long, and failed to discover the slightest deviation of flight when thrown either with much or little force in the air or in the water. The result of these experiments led me to conclude that the one-barbed arrow-points are merely weapons accidentally mutilated; and the most reasonable view of all the flints in the deposit now under consideration, save the intrusive white spear-point, places them in the general class of common cutting tools.

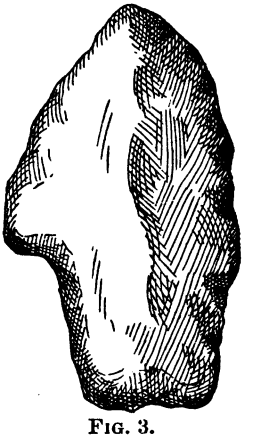

FIG. 3.

The second deposit of flints to which I have alluded was also turned up by the plow, on the 28th of March of the present year (1882), on the

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southern border of this county, 26 miles east of the Illinois River. Its location was on the brow of the hills overlooking Indian Creek to the south, and in a field cultivated for the last ten years, but which had been cleared from a dense growth of large forest trees. In this *cache* were thirty-five elegant implements entirely different in form, material, and finish, from those before described. Their position in the ground was vertical and closely packed together, but otherwise without any peculiar arrangement. Axes and other objects made of copper, buried in the ground long ages ago by their rude owners, are now and then found, in many instances still encased in shreds of coarsely woven fabrics in which they had been carefully wrapped; the preservation of the matting or cloth being due to the salts of the decomposing metal. It is probable that the articles in all minor deposits, as the two here described, were also enveloped, when consigned to the safe keeping of the earth, in bark cloth or dressed skins, which, in the absence of antiseptic mineral oxides, have long since decayed without leaving a trace of their presence.

The thirty-five beautiful flints of this Indian Creek deposit are the perfection of ancient stone-chipping art. In form they are of the broad,

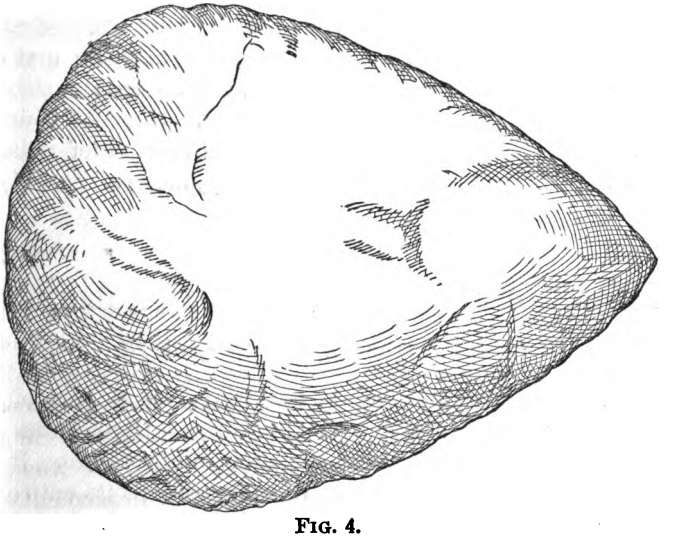

FIG. 4.

or lilac-leaf pattern, pointed more or less obtusely at one end and regularly semicircular at the other; the length but little exceeding the width; scarcely more than three-eighths of an inch thick in the center; they are smoothly chipped to an even sharp edge all around. They vary a little in size and somewhat in proportions, in the greater number the length exceeding the breadth by scarcely a third, while in a few, approaching the lanceolate type, the length is twice that of the width. The smallest of them is $3\frac{1}{4}$ inches long by $2\frac{3}{8}$ inches broad at the base; and the largest one measures 5 inches in length and $3\frac{1}{4}$ inches

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across the widest part. Six of them are made of mottled red and brown glossy jasper, and the remaining twenty-six of ordinary white flint, shading in texture from the compact translucent glassy, to the opaque milk-white varieties. In one of the neatest and most perfectly proportioned specimens the natural conchoidal fracture of the stone from which it was struck gives one side its exact contour without aid of any chipping. In several are embedded fragments of fossil crinoidal stems around which the siliceous atoms in solution or suspension first collected and solidified to form the rock; and in six there remain near the edges small patches of the buff, rind-like calcareo-siliceous outer coating of the flint-nodules from which they were split, not entirely removed by the process of manufacturing. The rounded edge of each is smooth and worn, and the sides of some are gapped, testifying to long and hard usage before their interment, and indicating conclusively that the broad circular edge of the tool was the one chiefly used. There is no reason to believe that these beautiful objects were used as weapons in any manner. Their pointed ends may have been inserted in handles of some description for convenience of manipulating them; but their crescent edges, so similar to the half-moon knives of modern curriers and other leather workers, forcibly suggest their use as skin-dressers. They are too fragile to have been serviceable in the scraping work of canoe-making, or in shaping any hard-wood or bone instruments; and could not have so well preserved their fine edges as hand-used agricultural implements, or clay-diggers for pottery making. Hence, I conclude that they were the *vade mecum* of the squaws, and their chief reliance in all their work requiring the aid of mechanical appliances.

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## INDIAN REMAINS IN CASS COUNTY, ILLINOIS.

By J. F. Snyder, M. D., *of Virginia, Ill.*

Cass County fits into the angle formed by the confluence of the Sangamon, flowing from the east, with the Illinois River in its course to the Mississippi, a little west of the center of the State. It is not in the "forks" of the two rivers, but the one sweeps its entire northern border while the other bounds its limits on the west. Its topography is identical in main features with the most part of the great undulating prairie system of the State; and may be briefly described as a scope of open rolling land, studded with groves and furrowed with creeks and rivulets, and fringed all along its northern and western portions with ranges of bluffs which form the boundaries of the river valleys. Extending from the foot of these ranges of bluffs to the rivers lie the rich alluvial "bottoms" varying in width from 2 to 7 miles. Viewed from below the bluffs rise to the height of 150 feet in picturesque grass-covered peaks and ridges separated from each other by deep

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wooded glens and gorges; and the bottoms, gently declining from the hills for half their width, are smooth as lawns, and now converted into the finest farms in the State, then reaching a lower level as they near the rivers, become heavily timbered and interspersed with numerous lakes and sloughs. Nature was here lavish in its supplies of fish, game, and wild fruits, and every condition necessary for the subsistence and endurance of a large population was present. This beautiful and fertile region, it is evident, was occupied by successive tribes from the earliest times before our history began down to the peaceable expulsion of the last of its dusky tenants, the Sacs and Foxes, during the administration of General Jackson. In testimony of this fact we have the relics of their remains, arts, and methods of life, which time has been powerless to destroy, in great profusion and full of fascinating interest. Of these silent records of a rapidly vanishing race the most important as well as the most legible are the earthen mounds which cover the bones and dust of their dead. They crown all the peaks and ridges of our bluffs, a few rising to considerable proportions, but the greater number are mere swellings of the surface not readily recognized as being of artificial origin. Every gradation of mound structure is here present, from the stately tumulus 30 feet in height to the broad, flat sepulchres so slightly elevated as to be scarcely noticed.

It would be useless labor and waste of time to attempt to locate on a map the situation of each mound or group of mounds in Cass County, and a tedious and unprofitable repetition to detail minutely the examination of each separate mound. For brevity of description they can readily be grouped in two or three classes, and the description of one will answer generally for all of its particular class. While in all of them, so far explored, the inclosed bodies of the dead were deposited on the surface of the ground, we find in some the position and arrangement of the remains to have been different from that found in others; from which we must infer that at times changes and innovations in mortuary customs were introduced, perhaps by different tribes who succeeded each other in occupancy of the country.

Of the first class of mounds, and by far the largest, and no doubt the most ancient, but one has yet been opened, and, unfortunately, no one versed or interested in ethnological study was present at the time to collect and preserve the relics it disclosed, or make any record of them. This mound, which I have before had occasion to mention,* formerly stood immediately upon the bank of the Illinois River, within the present limits of the city of Beardstown, 6 miles below the mouth of the Sangamon. This locality is slightly more elevated than the surrounding river bottoms on either side, and was anciently an island surrounded on one side partly by the Illinois and on the other by a slough through which the river had once passed and yet discharged its surplus water. The island, on account of its peculiarly favorable position, had been for

*Smithsonian Annual Report for 1876, p. 438.

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centuries a camping ground and stronghold of the aborigines. Geologically it, as well as most of the bottom, has a basis of loess or drift clay with a superincumbent stratum of sand 5 to 10 feet in thickness. All around the site of the mound the soil to the depth of 20 inches is composed of the *débris* of old camps, a mixture of ashes, mussel shells, bones of fishes and wild animals, charcoal, broken pottery, &c.; and here hundreds of implements of stone, bone, and shell have been obtained. The big mound is said, by persons who have often seen it before the hand of vandalism desecrated it, to have been more than 30 feet high by 150 feet in diameter at the base. Its summit commanded an uninterrupted view of the distant bluffs on both sides of the river and of the stream itself for 2 or 3 miles above and below. We can easily imagine the strange scene this great cone presented when it swarmed one autumn day with an eager, startled multitude of wild, half-naked barbarians gazing with astonishment at the sun-burnt, bearded faces and tattered garments of Marquette and Joliet as they wearily paddled their frail canoe up the quiet river at its base. More than thirty years ago the city authorities of Beardstown commenced the destruction of this splendid monument to utilize the clay of which it was composed for covering the sand of their streets, and in a few years the grand structure was totally demolished. The mound was found to have been made, on the sand, of clay taken from the bed of the river at low water or brought from the bluffs; and it had been used as a burying ground by people of different eras and races. Just below the surface the shallow graves and well-preserved skeletons of recent Indians, buried with implements of stone and iron and ornaments of glass and brass, were shoveled out; and a little deeper the spades uncovered the remains of a few Europeans, deserters, perhaps, from the commands of Chevalier La Salle or Lieutenant Tonti, who had found an asylum and graves among the Indians of this distant wilderness. There was one of them, however, whose mission in this part of the New World was widely different from that of his buried associates: the silver cross still grasped by his skeleton hand, the Venetian beads about his waist that had formed a rosary, and the ghastly skull still encircled by a thin band of polished silver proclaimed that here a self-sacrificing disciple of Loyola had expended life in the hopeless work of converting the heathen. These intrusive burials passed, nothing more was discovered until the original sandy surface of the island was reached, and what was there deposited before the great mass of clay had been piled over it was cast aside by the laborers without notice. From the street commissioner who had the work in charge I gained the following meager account of all that attracted his attention sufficient to impress his memory. Ranged along the middle of the structure was a parapet or wall, as he supposed, of rough flag-stones 30 inches high by 3 feet in breadth and 25 feet in length, designed apparently by the ancient inhabitants as a breastwork or rampart for the defense of their town from river approaches. But,

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on removing the stones, it was found that this work of defense was not a solid wall, but a series of crypts or stone graves, constructed by planting broad, flat stones perpendicularly in the sand and covering them with others of the same kind laid across them. These rude tombs were entirely empty. Not a bone or tooth remained; so great was the lapse of time since the bodies of the honored dead had been laid in these secure vaults that not a vestige of them survived but blotches of dark dust upon the yellow sand. On either side of the primitive coffins, but not contiguous to them, were traces of fire, and with ashes and charcoal were noticed calcined bones, small cubes of galena, and broken flints and pottery. The destruction of the great mound yielded many rare and fine implements and ornaments of stone and shell, which no one thought to preserve; and no one thought to observe whether they had been interred with the dead at the base of the tumulus or with those buried upon its surface. Among the many relics unearthed, one particularly fine axe of polished stone is remembered, having a groove cut around the middle and a cutting edge on each end; also three pestle-shaped objects of beautifully polished porphyry 20 inches long, 2½ or 3 inches in diameter, rounded at one end and pointed at the other.

Seven miles east of Beardstown, up the Sangamon, and quite near it, at Mound Lake, is a conspicuous landmark known as "the Mound;" a ridge-like elevation 40 feet high by 60 yards in width, and 400 feet in length. This mound has never been explored, and may be of artificial origin; but I am strongly inclined to regard it a natural formation (like the great Cahokia mound and other similar elevations in the American Bottom), merely an outlier of the loess or bluff formation left there in the primal erosion of the river valley. It is situated in the edge of the timber, on the bank of a small lake, 3 miles from the bluffs, and in the midst of the finest fishing and hunting district, even in this day, to be found in Illinois. Whether or not the Indians raised this mound is a question to be determined by future investigation, but there is no doubt of their having used it as a place of resort and camping ground for a great length of time. Although it has been in cultivation for many years, traces of camp-fires are yet seen all over it, and its surface and the adjoining fields are yet littered with potsherds, flint chips, and decayed bones and teeth of wild animals. One of the very few entire pieces of pottery ever recovered in this county was plowed up with some human bones on this mound in the early history of its cultivation. It was a globular earthen vessel, 10 or 12 inches in diameter, marked externally as usual with the impression of the fabric in which it was moulded or sustained while drying. A similar vessel, but smaller, was plowed up unbroken in a field a few miles east of this place a few years later. At a point about midway the lake-side base of the mound I discovered, some years ago, the remains of a kiln in which the savages had burned their pottery. It was an excavation in its side, almost circular and 4 feet in diameter, an old-fashioned lime-kiln in miniature, with walls burned

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as hard as a brick, and the bottom for the depth of a foot filled with ashes, charcoal, and broken pottery.

Nine miles farther east, up the Sangamon Valley and near the bluffs, is another large conical mound, 25 feet high, which has never been examined even superficially. These three mounds, assuming the latter two to be the product of human agency, are all of the first class, and of any class worthy the designation of mounds, found upon the river terraces or bottoms in the county.

The next class of mounds comprise those next largest in magnitude, and are more numerous than the first. They are invariably perched upon the peaks of the Sangamon bluffs, rarely exceeding 8 or 10 feet in height by 20 to 30 in diameter, and are more frequently met of much smaller dimensions. This class of mounds differs from all the others in the peculiar disposition of the remains they inclose. Too few in numbers to constitute the sepulchers of a distinct tribe with an exclusive burial custom, we must conclude that they cover the remains of a class of individuals distinguished from the commonalty for superior ability or merit. The mode of inhumation in mounds of this kind consisted in placing the body or bodies (for they contain from one to six or eight each) of the deceased upon the ground in a sitting or squatting posture, with the face to the east, and inclosing them with a rudely-constructed circular wall of rough, undressed stones, which was gradually contracted at the top, and finally covered over with a single broad stone slab, over all of which the earth was heaped. Though I have carefully examined several of these mounds, I have not yet succeeded in securing from them either an entire skull or earthen vessel, as their inclosed *cairns* are invariably found to have fallen in and crushed the bones and accompanying pottery into a confused mass. Nor have I discovered in them copper implements or pipes of any description, or any object of carved stone; but only a few flint and bone implements, and broken pottery without ornamentation and of very poor quality. Judging from every indication, external and internal, I would conclude that the class of earthworks under consideration were very old were it not for the singular fact that in one of them, a few years ago, the decayed bones of a single individual were found, with a few flint arrow points, a small earthen cup or vase, and an *iron* gun-barrel very much corroded.

The next class of mounds in this county are so numerous and were obviously constructed with so little care and labor that we must regard them as the depositories or cemeteries of the common and untitled dead. They are seen on every knob and ridge of the bluffs and on the hills bordering all of our smaller streams. Seldom rising in elevation more than a foot or two above the general surface, they frequently cover a space of 10 or 15 yards in diameter, and we sometimes find eight or ten of them in a row, along the crest of a ridge, separated from each other by intervals of 10 or 15 yards; each containing the bones of a greater or less number of individuals in different states of preservation. Their

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repose is often rudely disturbed by the plow, and their human remains scattered over the fields with broken pottery and occasionally flint implements, stone axes, bone awls, and other relics. In many mounds of this class the first step taken in the inhumation of the corpse or corpses apparently was to scoop out from the soil a shallow, dish-like excavation in which the body or bodies—generally several together—were deposited, sitting up with limbs flexed upon the breast; they were then probably covered with bark or other perishable material, as no large stones are ever encountered in these graves, and then covered with earth. In some of them the bones of the dead, in extreme stages of decay, are in great confusion and were buried without definite arrangement or system, somewhat as was observed by Mr. Jefferson in a mound which he describes in his "Notes on Virginia," indicating that in those the skeletons of all members of the tribe who had died within a definite period of time had been collected from the tree-scaffolds, or brought from the tribal bone-house, as was witnessed by Bartram, and laid together in bundles and "covered with a great mount." The chalk-like softness of the bones in this class of mounds tends to confirm the first-thought impression of high antiquity; but this fact alone cannot be relied on as satisfactory proof of their age when we consider that the covering of earth, perhaps not of great thickness at first, has been washed down and thinned by rains, leaving the animal remains but slightly protected from the decomposing agencies of water and frost. In one instance unquestionable evidence of comparatively recent origin was presented. In cutting down a roadway through one of the Prairie Creek ridges, since known as "Indian Hill," in the southwestern part of the county, a broad, low mound was removed and the skeletons of several individuals exposed. With the mingled mass of bones thrown out were found broken pottery, a few stone and bone implements, together with a quantity of glass beads and brass rings of European manufacture. Resting in what remained of the hand of one of the female skeletons was a beautiful pipe of polished serpentine in the perfect form of a squatting frog, of life size, but instead of the usual flat, carved base of the so-called "mound pipes," it had an aperture drilled to connect with the bowl for the insertion of a cane or wooden stem. Some time afterward, at the foot of this ridge, the plow turned up a single skeleton from a mound so small as to have escaped previous notice; and so far advanced in decay were the bones that it was with difficulty I succeeded in partially restoring, by the aid of glue and plaster, the skull and facial bones. The only relics found with this individual, which I judged to have been a female, were a stone frog, probably unfinished, larger than the natural maximum size, without perforations of any kind, and a pipe, representing the head of a fox, both rudely cut out of soft, coarse, yellow sandstone.

In all the interments I have heretofore mentioned the bodies of the dead, so far as I could ascertain, had been primarily placed upon the

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surface of the ground, or in shallow saucer-like depressions, in a sitting or doubled-up posture; or the dry bones, after decomposition of the flesh, had been gathered in bundles and placed on the ground in piles, and the earth heaped over them in a conical mound of greater or less magnitude. But in some, judging from the better state of preservation of the inclosed remains to be of most recent construction, a different arrangement is observed. The buried skeletons are found on the surface of the ground, but laid at full length on their backs, and surrounded or inclosed with thin broad stones or sheets of bituminous shale, stuck into the ground upright, and probably at the time of interment covered over with poles or bark before the earth was thrown on. This change in disposing of the corpse for burial was, in my opinion, a consequent innovation of the first contact with Europeans; and we have convincing reasons for believing that the old practice of burying the dead *above* ground in mounds of earth or stone prevailed generally among our Indians down to their acquaintance with the whites. Here, as elsewhere, we occasionally find the remains of Indians extended full length in graves *below* the surface of the ground, unmarked by mound or monument of any kind. These comparatively modern graves, copied after those of the white intruders, are, like the mounds, invariably on the high lands; and in many instances the crumbling chalk-like bones can only be identified as belonging to the red race by the implements of stone or shell ornaments associated with them.

Upon the open prairies of Cass County neither mounds nor graves of the pre-historic dead are ever found, and but few of their relics excepting flint weapons of the chase. The Indians no doubt hunted the deer and buffalo and elk on our prairies, but neither lived nor buried their dead there. Their camping-grounds and villages were in the groves along the streams and near springs, and they located their cemeteries upon the adjacent bluffs.

The southern line of this country in its entire length coincides very nearly with a small stream, called Indian Creek, which drains the prairies of a portion of Sangamon County, and, running almost directly west, joins the Illinois ten miles below Beardstown. This creek, too, was the resort of the hunter tribes, and along its banks are still traces of many of their camps and relics of their home life; and on the hills overlooking its valley are the low mound graves of their dead. On a high terrace sloping down to the water of this little stream I discovered, some time ago, the location of an ancient workshop for the manufacture of flint implements. The ground for a considerable space was littered with chips and nodules of flint and broken and unfinished arrow and spear points; and scattered here and there were several water-worn bowlders of granite and greenstone, brought from the drift clay of the hills for use by the early artisans as anvils. In this *débris* a beautiful polished celt of hematite and a few complete flint weapons have been recovered, together with bone punches and awls, and quantities of

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broken pottery, ashes, charcoal, and fragments of shells, bones, and antlers of deer and elk. Only a few of the Indian Creek mounds have been critically examined, but there is no reason for believing that they differ in any essential characteristic with those of the Sangamon bluffs.

The remains of Indian art found in this country differ but little from similar objects found in all parts of the Mississippi Valley. The race inhabiting this locality before us left no specimen of their work indicating any expression of genius, or any marked degree of skill or proficiency in the common arts of life. The pot-sherds seen in profusion about their old camps and mounds are composed in the main of clay and lime (calcined muscle-shells), but a large proportion were molded from clay alone, and apparently formed parts of small rude ill-shaped and poorly burned vases and cups. The best specimens are ornamented with impressions of coarsely woven fabrics and bark of trees, curved lines, nobs, and indentations, and the marks of finger-nails. In no instance has there been noticed the slightest attempt to produce upon any piece of pottery the representation of the human face or figure, or of any bird or animal. But few of their earthen vessels have survived to the present time; besides the two pots found unbroken, which I have before described, not half a dozen have been secured entire in the whole county.

I have not yet heard of an implement or ornament of copper having been found among the mound remains of the county, and of hematite only the small celt before mentioned; two or three so-called "plummets," several "paint rocks" (or burnt pieces), and some rough blocks of the ore, constitute all of the relics of this material so far known. Occasionally with the bones of the dead are noticed small cubes of galena; and in our collection is a ball of this ore, taken from a mound, weighing a pound and two ounces, which probably did service, enveloped in raw hide, as some form of weapon. No lead, however, has here ever been discovered with any of the aboriginal remains. It is passing strange that the Illinois Indians, so well acquainted with lead ore as we know them to have been, should have never gained the knowledge of its fusibility and ready reduction to metal. Plates of mica are of comparatively common occurrence in our mounds, and in many instances are found to have been deposited upon the breast of the corpse. In one of the small ridge mounds of the Sangamon bluffs a skeleton was uncovered having upon the decayed sternum ten plates of mica uniformly cut to the dimensions of 9 inches in length and 4 wide, with the corners neatly rounded. This mineral is not found *in situ* in Illinois, and of course must have been imported from a considerably remote distance.

Of marine shells no entire specimen of the conch, or *Cassis*, or *Lycotypus*, has been seen in the old graves of our country; but small ornaments and beads made of the columellas and broken pieces of large sea-shells are quite frequently found. In our collection is a necklace comprising 178 pieces of conch shell—each perforated in the center and presenting all



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stages of finish, from the rough angular sections two or more inches square, to the round polished complete disc two or three lines in thickness and from half an inch to an inch in diameter—which a short time ago was turned out of a low mound by the plow, with the skull and cervical vertebræ of a female skeleton. In another low mound on the bluffs the plow threw out, with a mass of chalky bones, a pint of small sea-shells (*Marginella apicina*), each pierced at the shoulder for the reception of a string to suspend them about the neck or hair. These beautiful little shells are often found in our mounds, and must have been in general use for personal adornment, or as a medium of exchange in the primitive system of commerce and trade. The valves of several species of fresh-water mollusks, especially of the *Unios* and *Anodontas*, were utilized as spoons and knives, and used for digging in sandy soil. Rarely we meet with ornaments cut from them. The hypothesis that our river mollusks constituted a part of the food-supply of the Illinois Indians is not sustained by the presence on our streams of shell heaps of any extent. Fish and game were abundant enough for subsistence at all times, and muscles were in this latitude evidently not considered a luxury.

The long bones of the deer, turkey, &c., were here as elsewhere fashioned into awls, needles, fish-hooks, and punches, and made to do service as handles for stone-tools and domestic utensils. The only ornament of bone (if it was an ornament) the county has yet produced is a broad, flat rib from the carapace of a very large snapping turtle, perforated at each end and ground smooth and polished all over.

Of objects carved in stone but few, besides the specimens I have specifically mentioned, have come to light in this county. Of pipes, a small "mound" pipe from Beardstown and the frog (of serpertine) are the only fine specimens known. In our collection are the fox-head pipe and several coarse, heavy affairs, without beauty or symmetry, which were undoubtedly used for smoking tobacco; and pipes made of clay and burnt are not uncommon. These latter objects were perhaps manufactured after the arts of the whites had been learned, as they are fashioned in the exact shape of common English clay pipes; at any rate, their resemblance to the imported article is so striking as to place their claim to high antiquity in serious doubt. As a rule, the objects carved in stone by the stone-age denizens of this region, exhibit such flagrant deficiency of taste or talent in design, and such low order of skill in execution, that we must conclude the few elaborate and finely-finished specimens now and then discovered here are importations from a distance, secured either by barter or reprisals in war, and were made by a people of higher intelligence and advancements in the arts. Of these exotic relics the porphyry "pestles," the "mound," and serpentine pipes, the perforated weapon of ribbon slate, a discoidal stone of milky quartz, and one of those beautiful perforated "ceremonial" stones of rosy, variegated, translucent quartz now in our collection, constitute all of that class known within the limits of the county. Agricultural flint implements, com-

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prising spades and hoes, are not uncommon in the rich loamy terraces of our rivers, but are generally inferior in size and workmanship to those met with in that portion of Saint Clair and Madison counties known as the American Bottom. The spades are smaller and ruder, and the hoes are plain and without notches for fastening them to handles. The broad hornstone disks, discovered some years ago buried in the sand a short distance above the large Beardstown mound, and which I have described in a previous paper,* are supposed by some archæologists to have been intended for agricultural tools, though never introduced in general use. Of this however we have no positive evidence, and until our knowledge of this class of relics is increased, we must regard that strange deposit as an unsolved mystery.

Celts and grooved axes of granite and various augitic rocks, of all sizes and many patterns, have been, and still are, abundant here. The largest grooved ax in our collection weighs twelve and a half pounds; the smallest, one and a half ounces. Our largest celt, cut from a coarse-grained diorite, weighs eleven pounds; and the smallest, obviously a child's toy, weighs scarcely half an ounce. Flint arrow and spear points, knives, scrapers, and hatchets of the usual forms have been collected in Cass County in great profusion. Hammer-stones, nut-stones, discoidal stones, perforated "talismans" or "arrow straighteners" of ribbon-slate, of basalt, and of fossil wood; stone-balls, plain and grooved; in short, all of the ordinary types of rough and polished stone implements in use by the pre-metal Indian tribes have been and still are often found about our streams and bluffs.

The archæological remains of which I have so far briefly treated are not peculiar to this county or to any circumscribed locality, but are common in all those portions of Illinois and of almost all of the Western, Middle, and Southern States contiguous to water-courses, where the aborigines, with identical habits of life and by identical methods, obtained, with little effort, their food-supplies. And the comprehensive generalization which I have attempted of the antiquities observed here will, with trifling variations and additions, apply equally well to those of other counties and States.

I have yet to mention, however, one object recently discovered in this vicinity, of rare occurrence in the prehistoric remains of this State, belonging to a class so suggestive of savage, ethnic characteristics as to incite interest and thoughtful study. On the crest of one of the highest and most prominent points of the Sangamon bluffs, jutting out from the range into the valley, a promontory, conspicuous for many miles in all directions, was one of the common oval swellings of the surface, usually known here as an "Indian grave," but so overgrown with bushes and weeds and tall grass as to have required close inspection to distinguish it from the natural contour of the hill. The owner of the land, having occasion to build a pasture-fence over this point, set a

* Smithsonian Annual Report for 1876, p. 438 *et seq.*

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laborer to digging holes for the fence-posts; but when the work had progressed as far as the "grave," the spade barely penetrated the sod at its edge, when it came in contact with a stone, which proved, on removing the soil covering it, to be a rough, flat sandstone flag, nearly square, 3 inches thick and 18 or 20 inches broad. It was thrown aside, and the fence completed. Some time afterwards, on learning that such a stone was found on this point, I concluded to explore the place with the hope of securing a skull or other relic of interest which it may have covered. Investigation soon convinced me that it had not formed any part of the covering of a grave, but had been laid flat on the bare ground. Carefully removing the bushes and earth in which they grew, other similar stones were uncovered, forming together a rude floor or pavement 12 feet in length by 8 in width, somewhat dish-shaped, the center being gradually depressed 10 inches below the edges. The stone first discovered had formed one of the corners of this curious structure. The long axis of the work coincided with the strike of the ridge, exactly north and south; and the flags of which it was made had been carried up from an outcrop of carboniferous sandstone a mile and a half distant, and were rough and uncut, but fitted together with surprising accuracy. They were reddened and cracked, apparently by long continued heat, and the interstices between them were compactly filled with fine ashes. Upon this pavement or "altar" was a mass of ashes, perhaps a foot thick in the middle, and a little more than filling to a level its basin-like concavity. On the surface of this ash-bed I collected fragments of charred bones, constituting parts of three adult human skeletons, among which were considerable portions of three lower jaws, with teeth intact, large pieces of six femurs and pelvic bones, the occipital protuberances of three crania, some bodies of vertebræ, and many small pieces so burned as to be unrecognizable. The fire which consumed these three skeletons had been smothered before it was exhausted, and while yet glowing, as many large pieces of charcoal were mingled with the bones, and the superincumbent earth in contact with the fire was reddened and partially baked. Interspersed throughout the mass of ashes filling the basin were many small pieces of bone and teeth converted into animal charcoal, and bits of flint, perhaps weapons, shivered and broken by the fierce heat of the pyre. I also observed many minute scales of burnt mica and shell, but found no part of any pipe or other object carved in stone, or of pottery. The mound inclosing this weird "sacrificial altar," after the washing of rains and beating of storms for centuries unnumbered, measured but little more than 2 feet high by 20 in diameter. The cracked and fire-scarred stones and great quantity of ashes without charcoal, mingled throughout with fragments of calcined bones, considered in connection with the prominent situation of the "altar," in full view of the valley below and of the highlands around for miles, seem to support the inference that here, at stated times, for a long period, had been practiced the burning

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of human bodies; or that the remains of a great number of individuals had at one time been consumed until, with the three last victims, the fire was suddenly extinguished by heaping over the seething mass the earth that was to keep the story for the coming of another race. We are warranted in believing that all tribes of Indians inhabiting this great valley, from the remotest times, executed by burning certain captives taken in battle; but we have no evidence that dish-shaped platforms of stone were constructed especially for that purpose. The simpler method of securing the doomed wretch to a stake or tree and there slowly roasting him amidst the wild jeers and exultations of the captors is far more consonant with well-known Indian nature and usages. But for the absence of collateral testimony the hypothesis that so-called "altars" of this class were made for the purpose of incinerating, at stated periods, the remains of the dead of the entire tribe, collected for such disposal from tree-scaffolds or bone-houses, would present many elements of plausibility. It is possible that a single tribe may have so cremated the skeletons of their deceased kinsmen before making their voluntary or compulsory exodus from this locality; but observed facts fail to sustain the idea that such a mortuary custom prevailed here generally at any time or among any people. We have the authority of La Hontan that the Indians of the Lower Mississippi "burnt their dead, keeping the bodies until they had accumulated" sufficiently in numbers for the grand ceremony, which was performed in certain places remote from their villages. But Du Pratz, whose opportunities for observation and sources of information were equal if not superior to his, positively asserts that "none of the nations of Louisiana were acquainted with the custom of burning their dead." Had this custom been in vogue to any considerable extent or for any considerable period of time it is plain that cinerary altars would be numerous and sepulchral mounds exceptional. In Cass County and the State of Illinois, so far as my knowledge extends, this strange monument is unique and without parallel among thousands of Indian mound-graves, a mystic expression, it may be, of religious fervor or superstitious frenzy.

The intrinsic evidence of many prehistoric remains of this county sustains their claim to extreme antiquity, but no work or specimen of art of a former race has yet been found here above the capacity or achievement of the typical North American Indian. And in studying the life, habits, and burial customs indicated by these relics, I can see no necessity for ascribing them to the agency of a distinct or superior race, when they express so unmistakably the known status of Indian intellect.

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## ANTIQUITIES OF JACKSON COUNTY, ILLINOIS.

By G. H. French, *of Carbondale, Ill.*

Among the many objects attesting that Southern Illinois is part of a region once inhabited by a race of people about whom comparatively little beyond conjecture is known, the various mounds and cairns form a conspicuous part. The exploration of one of these structures was the subject of two visits by Dr. E. B. Chapin, a resident of this place, and myself on the 3d of April and the 3d of June, 1878. The mound is situated on the farm of E. M. Norbury, about 3 miles south of here, and is about 40 rods west from the Illinois Central Railroad, on a hill that forms a spur from a comparatively level area of land back a little from a creek on the south, and just in the edge of a piece of second-growth oak timber. Situated as it was on the point of this hill, it was difficult to judge at first of either its height above the natural ground or of its size; but subsequent examination showed that it was, in its highest part, about 3 feet above the original ground, and it appeared to be 25 or 30 feet in diameter. We found, however, that inside these limits was a series of stones that seemed to have been placed around the base of the mound to hold the dirt in position as it was heaped up, and as the elements in time had removed the dirt from the higher parts and spread it around and beyond these stones they had become partly or wholly covered up, while the extent of the structure was increased. If this theory is correct, and the position of the contents of the mound seemed to indicate that it is, the mound was originally oval or nearly oblong, and measured 12 by 15 feet in its shortest and longest diameters.

For 2 or 3 rods to the south and for 20 or more rods to the north and northwest, chips of flint were abundant, both mingled with the soil and on its top. The same soil and flints mixed with broken bits of pottery formed the general substance of the mound. These seemed to indicate that the immediate vicinity had been the site of an Indian workshop and perhaps camping ground. In the time when this ground was covered with the primeval forest the small branches only a few rods to the east and west would have afforded them water most of the year, if this locality ever formed a permanent place of abode; while the creek, from 50 to 80 rods to the south, would be the unfailing source when the heats of summer had dried up the others. Several other facts seemed to point to this as having been for them a central position. Across the creek, that is to the south, and 80 or more rods on the other side, in a southwesterly direction, was a stone mound that we also explored, but found no remains of any character either in or about it. It seemed to be simply a monument of direction as much as anything we could discover, an irregular cairn of stones in such a position that the natural contour of the land would indicate there might have been here

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a trail, but all other marks are now obliterated. Still further to the south, but whose exact position I did not learn, are several other mounds, which I think have been more or less explored. To the southeast, at a distance of 5 or 6 miles, is a structure known now as "Stone Fort," that is supposed to have been constructed by the Indians, and probably for defensive purposes. This is, or evidently has been, a wall across the neck of a projecting point of rocks, though it is now but a long pile of stone as though a wall had been demolished. Northwest from this mound, some 12 or 15 miles west of Carbondale, are other mounds, while north or northwest of these are others, as though forming a line with those that have been found within the vicinity of East Saint Louis and Alton. All these facts seem to bear more or less directly on the idea that at some time this locality had been a place of general work and resort.

The central part of the mound had been more or less disturbed on top by having been a place where brush and other refuse had been burned, and where hogs had lain and rooted, but it was claimed by Mr. Norbury, the owner of the place, that other than this it had not been disturbed. As intimated before, the mound was composed of the natural black surface soil of the place mingled with chips of flint and broken pieces of pottery, the latter red, the flint of a blue kind, and in all shapes and sizes, but we found no arrow-heads or other implements of the same kind of stone. We found only one arrow-head, and that was of white flint, regular lanceolate shape and about 3 inches long. The pieces of pottery were all small and of irregular shapes. The only implement found, other than the arrow-head, was a thong-gauge, about 3 inches long by about an inch and a half wide, with two gauge-holes and a slight depression on one side between the holes as though a place for the thumb when used. This was composed of either red stone or pottery; I am inclined to think the first, as it seemed to be too compact for pottery, or at least more so than the broken pieces found.

In the northwest part of the mound was found a skeleton in a horizontal position lying on the back with the head towards the northeast, and about 3½ feet below the top of the mound. The bones were so decomposed that it was with difficulty that a whole one of any part of the skeleton could be taken out without breaking and crumbling, though while in position the shape of the skull indicated that it corresponded with those taken from other mounds at Sand Ridge, this county, and other points in the vicinity.

No other complete skeleton was found in the mound, though pieces of human bones representing nearly all parts of the skeleton were scattered through different parts of the structure, together with the bones of other animals. Of these we could recognize the lower maxillary of deer and the atlas of a bear, but the rest were too much broken to be identified. Besides these there were a few land-shells, a species of helix, and a few broken salt-water shells, perhaps of some species of unio. The scattered

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human bones were all of them more or less broken, the breaking seeming to have been done when the bones were fresh. In one or two instances only were we able to find the different pieces of the same bone. In one case a femur was broken into three pieces, the head and two parts of the shaft, and these were 2 or 3 feet apart. It may be stated here also that these scattered human bones, the flints and broken pieces of pottery, together with the shells and bones of animals, were all of them above the depth where the skeleton was found, as though they were mixed with the earth of which the mound was built. We could account for this in the following manner: The chips of flint, shells, bones of animals, and the scattered human bones were on the surface when the burial took place, and after the body had been placed in position the dirt on the surface that could be the most easily obtained was gathered up together with whatever was scattered over the surface. Of this the mound was built, and, from what we know of the habits of the Indians of the present, it takes but little imagination to form a picture of the squaws gathering up this material in their baskets and carrying it to the place where it was wanted. This would imply that the people who did the burying were cannibals, and the broken character of the scattered human bones would in a measure substantiate that view.

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## A STONE FORT NEAR MAKANDA, JACKSON COUNTY, ILLINOIS.

By G. H. French, *of Carbondale, Ill.*

In company with Prof. A. C. Hillman and Mr. John Martin, one of our students very much interested in natural history, I visited Stone Fort, near Makanda. This place is situated in township 10 south, range 1 west, of the third principal meridian, on the east side of the Illinois Central Railroad, and is about three-fourths of a mile, by road, northeast from the village of Makanda. The country here is very hilly and rocky, Makanda being situated in a gorge, through which the Drury Creek runs. North of Makanda, where the road turns east, is a side gorge, through which runs a small tributary stream of the Drury, more or less lined with rocky bluffs on both sides. The surface beyond the bluffs in some places slopes upward; at others the bluffs are nearly as high as the general elevation of the surrounding country. On the west of a bluff known as the Stone Fort another smaller stream comes down between the bluffs. It is now nearly dry but is well filled with water in times of freshets. Stone Fort is a ledge of rocks projecting out as a rounded point from the northern and eastern side of this second gorge, more toward the stream than the general course of the bluffs. On the southern face the bluff is 125 feet high. Across its neck above extends a pile of stone, running east and west, which gives the place its only import-

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ance archaeologically. This pile of stone is about 280 feet long, and on an average 2 rods wide, and in the middle is about 30 inches high. The distance from the front face of the bluff to the middle of the stone wall is about 300 feet. The lengths were obtained by pacing, and the width and depth by tape-line. The middle of this inclosed space is from 15 to 20 feet higher than the edges, the slope being gradual. The whole space is covered with trees similar in size and appearance to those on the tops of the other bluffs. All around the bluff, from the front or south face to the east and west, the rocks are either perpendicular or overhanging; but on both sides back of the line of piled stone the top may easily be reached, as the distance from the summit of the bluff on its southern face to the more nearly level ground below decreases toward the north, being perhaps 50 feet at the eastern and 25 feet at the western end of the stone wall. This pile of stone across the neck of the bluff shows evidence of having been a wall. To see if there were any signs of regularity in its structure, and upon what base it had been constructed, we took out a cross-section of the stone in one place where they seemed to have been thrown down, and partial sections in several other places. First, the materials are sandstone, the same as that of the bluffs. Many of them are flat, all irregular, just as would occur in breaking up that kind of stone. In size they vary from some smaller than a man's head to those as large as one man can lift. They are built upon the ground and not upon the ledge of rocks, as the earth beneath the pile is the same as that constituting the top of the bluff, save that here there is no vegetable mold. Most of the larger stones are placed where was the base of the wall, seemingly with but little regularity. At the ends, where the hill is a little steep, the flat stones at the bottom are set on edge, and the next course so laid that its top surface would be nearly level, or sloping a little up the hill. This, of course, would make it easier to lay the succeeding stones. Where these stones came from is hard to tell. If there were only a few of them one might conclude that they were picked up from the surface of the inclosed area south of the wall and on the open space north of it. But there are not stone enough on the same area of the tops of the other bluffs to make such a pile. Part of them may have been obtained in that way and the rest brought there from above, where this bluff is not very high.

The question "why they were placed there?" seems to admit of but one answer—they were a means of defense. The fact that it has been known as Stone Fort ever since the country was settled implies that such has been the general opinion of the people acquainted with the place. It has been assumed, however, that it was the work of hunters for the purpose of a protection to their camp. I can hardly conceive that a party of hunters, for a temporary camp, would go to the trouble of gathering such a mass of stone as is represented in 280 feet long, 33 feet wide, and, on an average, 1½ feet high. It may have been the location of an Indian encampment in some former years, and built

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by them as a protection from their foes, and used very much as Starved Rock, on the Illinois River, was by the Illinois Indians.

The question will occur, where did they obtain their water for domestic purposes? On the west side, just within the end of the wall, there is a deep, narrow fissure in the rocks, down which one man at a time might go; and it is only a few feet from the bottom of this fissure to the stream that comes down the rocks. Evidently there is always a little water here, and it is quite palatable, as we found by trial. This may have been their mode of egress and ingress to the inclosure.

We found very little remains of the former occupants. At one place beneath the stones, evidently just south of what was the south side of the wall, we found a broken arrow-head of white flint, the only relic discoverd in the inclosure. We did not dig into the ground, either south or north of the wall, not seeing any elevation that looked like a mound. I would add further, in relation to the bluff, that the fissure just spoken of, inside the western extremity of the wall, is the only place where it is possible to reach the top from any point south of the wall.

That it was a place of refuge from any body of men using fire-arms does not seem probable, for the following reason: In addition to the evidence which the broken arrow-head affords, the bluff to the south, across the creek, is considerably higher than this one, and is within range of a rifle, but would not be within arrow-shot. This, and the fact that there seems to be no tradition of the building of the wall, would lead us to conclude that it antedates the white settlements of this region. It is not far from a number of Indian mounds to the north, or a little west of north, that seem to form a nearly continuous line with others still farther north. One of these mounds I opened in 1878.

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## ANCIENT REMAINS NEAR COBDEN, ILLINOIS.

By F. M. Farrell, *of Cobden, Ill.*

Along the range of sandstone bluffs that traverse Southern Illinois running eastward and forming the water-shed between the tributaries of Big Muddy River on the north and Cache River on the south, and from 16 to 20 miles east of the Mississippi River, I have been making a few discoveries which prove that the sheltered nooks formed by the projecting cliffs were the favorite abodes of an ancient race that once peopled the Mississippi Valley.

The first place investigated is 2 miles east of Cobden, Ill., under a projecting cliff of sandstone (millstone grit) about 60 feet high and facing the east.

Around an ancient fire-bed, not more than 1 foot below the surface, in a loose, porous clay, were found charred bones, flint chippings, fragments of arrow-heads of very rough workmanship, fragments of rude

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pottery made of red clay, and fine gravel. The pieces were half an inch thick, or nearly so, and, judging from the curve, they may have been of considerable size.

One morning in March, 1880, a party of us went to the bluffs known locally as Buffalo Gap, a deep triangular hollow, inclosed on two sides by immense ledges of stone, towering high above the tree-tops, and projecting far over the base, and forming sheltered nooks which bid defiance to the storms of winter and the heat of summer.

All along the base of these rocks the ground is strewn with flint chippings, bones, bits of pottery, arrow-heads, rocks, and rubbish. We made excavations in several places, and to various depths, varying from 1 to 3 feet.

The earth is dry and loose, and composed of considerable vegetable matter, and has the appearance of having been forming slowly for ages. All through this dust we found bits of pottery, arrow-heads, charred bones, charcoal, bones split lengthwise to extract the marrow, mussel-shells, turtle-shells, deers' horns, bones and jaws of various kinds of mammals, a bunch of charred hay, a large limestone mortar, having a bowl nicely cut in the center, which was circular in form and 1 foot in diameter, and deep enough to hold about a gallon. On a fire-bed 2 feet from the surface were the fragments of an earthen pot, probably a cooking vessel, as it contained bones and a fragment of a deer's upper jaw; also other material, which we were unable to determine. Near this pot were numerous spherical bodies, resembling spice in form, white, hollow, and too fragile to be preserved.

The pottery has markings on the surface like the impression of grass, twine, and sometimes small sticks, showing that the vessels were molded in some kind of woven sack or basket made of willows and twisted grass. Some of the fragments were smooth and thin, the coarser ones one-half inch thick, and made of pounded mussel-shells, small gravel, and red clay. The shells which were found were probably brought up for that purpose, the animal having been used for food. The arrow-heads are rude and very poor compared with the field specimens of which I will speak later.

An old fort is near by, on top of a cliff, and cut off from the main land by a wall of stone, which is now nearly flat, covering a base 20 feet wide and about 150 feet long. The fort is triangular, the wall making one side and the perpendicular rocks below forming the other two sides. It had but one point of access from below, which is a path up a crevice in the rock, and could have been easily defended from above. This has the appearance of being very ancient.

Near the Illinois Central Railroad track, 5 miles north of Cobden, are other large bluffs, and underneath are numerous beds, which have afforded a great many relics. Several human skeletons have been unearthed, more or less preserved, though usually badly decayed, but one skull

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(female adult) was nearly perfect; forehead small, domestic faculties largely developed. The body of an infant was found near this one.

Besides human skeletons, bones of a good many kinds, though mostly deers' horns and bones, bones split lengthwise, large numbers of mussel-shells, turtle-shells, broken pottery (some of which must have been large), a considerable amount of parched corn, and the impression in the earth of woven fabric, which is rare here. The arrow-heads are numerous but of a rude character. Several fine bone awls were found. This seems to be the richest locality yet discovered here.

Near Makanda, 3 miles north of this place, is an old fortification, called Stone Fort, as it has once been defended by a stone wall, which is now nearly demolished.

*Field relics.*—Near all large springs implements of stone are found more numerous than at other places. They are of fine workmanship usually, and of various forms. The arrow-heads are of flint, of all colors. Shovels from 4 to 15 inches long have been found. Celts are of greenstone, handsomely polished, from 3 inches to nearly a foot long. Greenstone hatchets, having a groove for a handle, are found of various sizes, and well made. I have two in my possession, weighing 1½ and 2½ pounds, respectively, though some found here will weigh probably 5 pounds.

*Workshops.*—Three miles west of Cobden, near Kaolin Station, on the Saint Louis and Cairo Railroad, is the most extensive workshop I have found. It covers several acres of ground, and car-loads of flint chips and bowlders are strewn everywhere. Four miles south of Cobden is another of less dimensions. Others of greater or less size are met with in various parts of the country, but no relics of much value are found with them.

*Aboriginal burial.*—Seven miles west of Cobden, in Union County, Illinois, near Clear Creek, on the farm of Adam Smith, is an aboriginal cemetery. It is situated on a hillside facing the south. The graves are in a group, and were probably arranged according to some plan, but the spot has been in cultivation fifty years, and the graves are sadly mutilated. Each grave contains a single individual. The bodies were stretched out at full length. Of the two that were examined one was lying with the cranium to the west; the other toward the north; the face of the one toward the rising sun; the other facing the noon-day sun. The remains were inclosed in sarcophagi made of thin slabs of white sandstone, which were probably quarried from a ledge about three-fourths of a mile distant, in the bank of Clear Creek. The bones were (except the teeth) nearly decomposed. The graves were scarcely a foot beneath the surface, and mostly disturbed by the plow.

The mounds 7 miles below Jonesborough, Ill., have afforded many valuable relics, including numerous perfect water-vessels and other pottery, arrow and spear heads, celts, hoes, hatchets, pipes, skeletons, and one stone idol made of stalactite. These mounds have been investigated by F. M. Perrine, of Anna, Ill., who has a fine collection of mound and field relics.

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## ANTIQUITIES OF WAYNE COUNTY, ILLINOIS.

By H. F. Sibley, *of Fairfield, Ill.*

Wayne County is one of the larger counties of the State, located on the southern border of the prairie region. At least three-fourths of its surface was originally timbered land. The prairies are generally small. The principal streams are the Little Wabash and Elm Rivers and the Skillet Fork (a branch of the Wabash). The surface is generally rolling and elevated from 50 to 125 feet above the stream beds. The Wabash and Skillet Fork bottom lands are generally rather low and flat, with the exception of some few ridges of high land, ordinarily lying parallel with the watercourse. On the ridges generally we find the ancient tumuli of the Mound Builders. One of the most prominent places of ancient resort in our county was a ridge in the Skillet Fork bottom, now known as Fleming's Ridge, in Arrington Township. (See map.) The ridge commences at the river and runs almost due north to the prairie, and is from one-half mile to one mile wide. Near the south end of the ridge, about one-quarter to one-half mile from the river, is a group of mounds, seven or eight in number. Several farms have been opened up, and mounds are found all over the ridge. Two of them have been explored and the ordinary fragments of pottery, shells, human remains, &c., were found, but all seem to have been disturbed. Just to the southwest of the ridge I have drawn a half-moon-shaped figure for a pond, or rather where a pond had been, but which has been drained for the fish. It is now known by the name of the Horseshoe Pond from its peculiar shape. It was probably an artificial fish-pond built by the Mound Builders, as it fills up when the river is high, but can easily be shut up even during high water. Southeast of the ridge are two more mounds, about 100 feet long and 50 feet wide, and now 6 or 7 feet high. One of them was examined, and in it were found some flint arrow-heads (very rude), an immense number of turkey and wolf bones, together with deer-horns, &c., which seemed to have been thrown into fire, some of them being partially consumed. Human remains were also found, as well as some broken bits of pottery. There seemed to be no line of separation.

In the southwest corner of Big Mound Township are three mounds in one group which have never been examined. Northwest and near to them are two more, of which one was examined, and in it were found rude arrow-heads, broken pottery, &c., but could not get a skeleton in any state of preservation at all, so as to determine how they were buried.

On the east edge of the township, some 2 miles south of this place (Fairfield), are two mounds, one of which was slightly examined, and found to be a burial mound. One mile farther south, almost right in the center of Little Mound Prairie, is a natural elevation, topped out by

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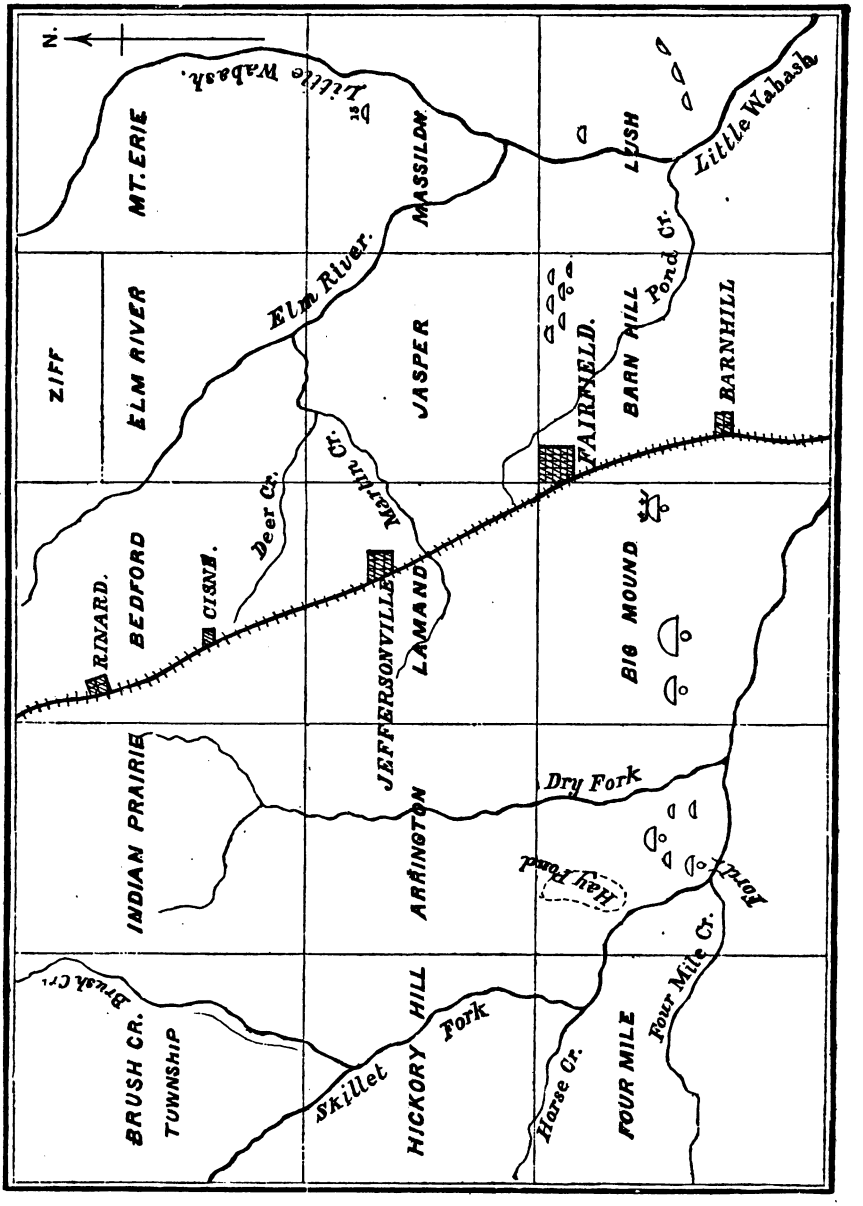
the Mound Builders into a cemetery that can be seen for a long distance. It was the burial-place of hundreds who are interred in the stone cists, of which numbers have been examined. Axes, arrow-points, &c., used to be found in abundance in the vicinity, but they are now




about all picked up. In Barnhill Township, 5 miles east of us, is a group of seven mounds, which have not been examined, but which were probably dwelling-places. They are small, about 90 feet in circum-

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ference, and from 2½ to 3 feet high. In Leech Township, on the west side of the river, is a group of six mounds, which have not been examined; neither has the one which is on the east of the river at the Iron Bridge, where the stage road crosses the stream. About one mile east and one mile south of the bridge are three mounds, standing as shown on the map, one of which was examined, and found to be a burial mound. About 100 yards southwest of these mounds is a pit 10 or 12 feet square and 7 or 8 feet deep, and within 6 or 8 feet of the river bank. It has never been examined. One of the old men in the vicinity told me he had noticed it every year for a long time, and says it is not nearly so large as it used to be. Just below, at the mouth of the Pond Creek (on the west side of the river), is a square inclosure, said to be 100 yards or more square, called the Old Fort, but I have not seen it. In Massillon Township is a group of seven or more mounds, as shown on the map. It is a very high bluff, and has been a famous place for the ancient race. It is a good fishing and hunting locality, the river at that point containing a shallow rapid or riffle, and just across the river on the east side is a low, flat, bottom land, stretching around for miles, and has been one of the choice spots for game.

In the northeastern part of the county are two mounds, which, from the description given, must be the largest in the county, being 60 or 80 feet high and wide in proportion, but they have never been examined.

Our mounds, as a rule, do not at all compare with those on the Ohio River, about 60 miles south of us. They are small and scattered, and are generally found in groups of from 3 to 20. I must not omit to mention that there are a number of mounds outside of Wayne County, situated on the bank of a river in White County. I have never been to see them, but I have been told that they number between thirty and forty, all in a row and following the trend of the river. Throughout the county generally are found more or less of the stone implements, but they are much more plentiful near the streams and in the timbered lands, and are scarce on the prairie.

In the Smithsonian Report for 1876 (page 436) is cited a remark of Messrs. Squier and Davis relating to the disks of black flint. There have been two deposits found in this country, one in the county south of us (White), and one in the county west (Jefferson). The first one contained thirteen of them, of which I obtained eight, and the other contained forty-six, of which I obtained several. Speaking of the disks, on page 440 (1876), it is said: "Thus far not one of them has been found isolated or bearing marks of use." This is a mistake, if mine are of the same kind as those spoken of by them, as I have found three in this county, one at a time, and one of them not quite twice the size of a trade-dollar. They are of the same stone and the same shape, &c., but none bear marks of use. In addition to those given above, fifteen more mounds have been found in Massillon Township. They are on the west side of the river, about one inch (as measured on the map sent) from the north

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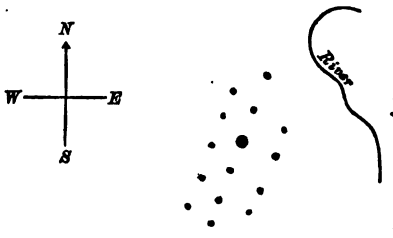
line, on a high bluff, hardly a quarter of a mile from the river. They are somewhat in this shape, the largest mound being in the center.




The mounds in Barnhill Township, just east of Fairfield, are seven in number. They were explored two or three years ago, but nothing but charcoal was found in the bottom. I have inquired of the man living on the farm, but he does not find many tools, &c. The mound in Big Mound Township marked  is 3 miles from here. It is, probably, a large natural mound on the prairie, to which dirt, &c., has been brought from other parts, and so completed the cemetery. There are many graves, and several bodies or parts of bodies appear to be buried in one grave, but they are so decayed that no perfect skulls can be obtained. The graves are made by building the side and end walls of a hard sandstone, with a large one for the bottom and one for the top. The stone could not have been obtained nearer than 7 or 8 miles, on the Skillet Fork. Two trees are growing on the mound, one of them a catalpa and the other an oak, both of which have been planted, beyond a doubt. The catalpa is found in abundance in our river bottoms, but there are none on the upland. The other two mounds in the same township are also large, and located in the bottoms in the woods. One of them was found to contain human remains and a few broken pieces of pottery, but nothing of value. The other contained human remains, but not in any order of arrangements; also river shells, deer-horns, wolf jaws, &c.; also much charcoal and many small stones occur among the mass. The group of mounds in Four Mile Township is near the Skillet Fork. The one in the southwestern corner, marked "Explored," has been plowed over a great many times, and evidently contained human remains and flint tools. The second one above it was explored this spring, but not very thoroughly, as it was very warm and the woods dense. Human remains were found, and one broken piece of pottery, too small to tell its shape, and one flint arrow-point. The pottery was different from any I have ever seen, of bright-red clay and small pebbles. There are probably a great many mounds about 12 or 15 miles from here, in the woods, all of which are built on what is called Fleming's Ridge, mentioned above. Probably the Mound Builders settled on the same ground for this reason: the best ford on the river was just south of the mounds, in fact it is the only place I know of where it can be forded at all for miles. The place marked "Hay Pond" is a low place that used to be a kind of lake, which was drained by the inhabitants to catch the fish. The mound in Leech Township (on the north) is near my dwelling. Those south of it are three in number, situated as indicated in the drawing. Right on the bluff is a square hole 10 or 12 feet in diameter. All of these mounds are unexplored. The square hole used to be much deeper than it is now, about 5 to 7 feet.

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# MOUNDS AND EARTHWORKS IN VANDENBURG COUNTY, INDIANA.

By Floyd Stinson, M. D., *of Evansville, Ind.*

On the 3d day of June, 1876, I visited Mathias Angel's farm, situated 6 miles southeast of Evansville, where I found six mounds, four distinct cemeteries, three lines of earthworks, one large stone cist, and one altar.

The first and most western mound is 15 feet high, 585 feet in circumference, truncated, and 100 feet across the top. The second mound, east-northeast of this, is 8 feet high and 150 feet in circumference. This had been dug into by Charles Artes, who found in it some human bones, burnt earth, charcoal, and ashes. Near this mound I found a stone cist, which was 8 feet long, 4 feet wide, 4 feet deep, walled with slate. In this were found several skeletons. Nearly north of this is a third mound, which is 20 feet high, 402 feet in circumference, truncated, and 60 feet across the top. On the top of this mound, just below the surface, was burnt earth. Forty yards from this I found a remarkable altar. The roof, which was sand rock, was plowed off; the sides and ends were slate, 4 inches thick; the floor the same as the roof rock. Inside it was 3 feet long, 2 feet wide, and 14 inches deep. The contents of this altar were first earth, then one-half peck of burnt and charred bones, charcoal, and ashes. Part of the bones were human, (the patella and head of the femur). Beneath this was burnt earth, and below that, earth. I have in my cabinet part of the contents of this altar.

East-southeast from the second mound is a fourth mound, which is 150 feet in circumference and 4 feet high. To the east of this is one of the most remarkable mounds I ever beheld. It is 100 yards long, 100 yards wide, and square; consequently it is 400 yards around. It is 45 feet high to a plateau, the width of which is 185 feet. Then at the southeast corner, on the top, there is an additional mound, 15 feet high, which would make a mound 60 feet high. Then at the west end there was an elevated platform 4 feet high, 150 yards long, 55 feet wide. I will designate this as the fifth mound. East and west of this great mound are burying-grounds. All of the graves in this section are walled with slate. East of this again is a sixth mound, which is 10 feet high, 30 yards in circumference. Around these six mounds is a line of earthwork, resting at either end on the river bank, and inside of this are two other short ones. The outer line is about 1 mile in length. The middle and inner lines are about 2½ feet high, and about every 40 yards there are mound-like widenings on the outer edges. One-half mile northeast of these mounds is a mound 50 feet high and 164 yards in circumference.



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## EXPLORATION OF A MOUND NEAR BRACEVILLE, TRUMBULL COUNTY, OHIO.

By S. N. Luther, *of Garrettsville, Ohio.*

Recently, in company with Mr. C. Baldwin, I explored an ancient mound on the estate of the late Nathan Humphrey, esq., situated one-third of a mile southeast from the center of Braceville, Trumbull County, Ohio. Miss E. B. Humphrey, who now has charge of the estate, informed me that the mound was formerly covered with a growth of heavy timber, which was cleared from it by her father many years ago, and that grading and the process of cultivation have reduced it from not less than 10 feet in altitude to its present height of 4½ feet. It is situated on a terrace a few feet above the alluvial bottom of the Mahoning River.

The length due east and west is 75 feet, and the breadth about 60 feet. It is elliptical in form, composed of the dark sandy loam which surrounds it, and in several places has been considerably disturbed by previous explorers and by the burrowing of woodchucks. We commenced by digging trenches from the east and south sides toward the center, somewhat below the base of the mound. In the eastern portion we found the remains of five bodies, a short distance from each other. Except the crania and fragments of the long bones, nothing could be saved, barely enough remaining to define the position in which they lay. Of the crania two were saved in fair condition. With two others we were not so successful, though enough was preserved for several measurements. The fifth was so frail that no portion of it had escaped decay. The bodies were usually buried with the head to the west, though in one case this order was reversed, the head lying to the east. Near the latter were a quantity of very bright-red ocher, pieces of pottery, and at a short distance a stone pipe of peculiar construction. Many bright fragments of stone, a few arrow-heads, and flakes of chert were found in the process of excavation. Throughout the undisturbed portion of the base, and about 1 foot from the original soil, a very hard layer of earth was discovered, 2 inches in thickness, beneath which were the skeletons. It is stated that a tier of skeletons were obtained by removing the upper part, and that many relics have been secured, but the persons who made the excavations being inaccessible, I cannot obtain authentic information of their observations.

*Measurements of the crania.*—No. 1, the best preserved skull, is that of an old person. Length, 7.05 inches; vertical height (inside measure), 4.92 inches; occipito-frontal arch, 13.09 inches; parietal diameter, 5.68 inches; horizontal circumference, 20.35 inches; cephalic index, .8056.

No. 2 is that of a young person (the wisdom teeth only partly through the process). Length, 6.90 inches; vertical height (inside measure), 5.10

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inches; occipito-frontal arch, 14.45 inches; parietal diameter, 5.45 inches; horizontal circumference, 20.25 inches; cephalic index, .7898.

No. 3. Length, 7.07 inches; vertical height (inside measure), 5 inches; occipito-frontal arch, 13.30 inches; parietal diameter, 5.45 inches; horizontal circumference, 20.50 inches; cephalic index, .7708.

No. 4. Length, 7 inches; parietal diameter, 5.70 inches; cephalic index, .8143.

Three-fourths of a mile west of Hiram, Portage County, I examined a stone structure to which my attention had been called several times by persons who supposed it to be a place of burial. On viewing it, I found an annular pile of sandstone nearly 3 feet high, inclosing a space 10 feet in diameter, with an outer diameter of 25 feet, making a wall 5 feet in width. When the center was excavated, ashes and charcoal were found to the depth of 3 feet, the wall showing the action of much fire. The entire absence of bones and other kitchen refuse, with the elevated location, led to the inference that this was a signal station. It is one of the highest points on the Western Reserve, and commands a view of over 30 miles to the east, and also a portion of the Cuyahoga River on the west.

There is quite an important cemetery in the extreme southeast part of Geauga County, 2 miles southeast from the village of Parkman. The graves were mostly constructed of flat stones, placed on edge at the sides and ends. They are paved and covered with the same flagging stones found at the Grand River, which is not distant. Over these were piled loose stones. The location is a side hill, with a descent to the east. In one place the graves extended several rods up the hill in a line, in such a manner that the foot of one grave made the head of the next, and were all covered by a continuous pile of loose stone. This burial-place has been almost entirely despoiled by the persistent efforts of relic-seekers. I can learn of no implements of special interest that were found here. Those obtained consist of the commoner forms of chert, with celts, grooved axes, &c.

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## DESCRIPTION OF MOUNDS AND EARTHWORKS IN ASH LAND COUNTY, OHIO.

By H. B. Case, *of Loudonville, Ohio.*

The accompanying map locates nearly all the mounds and earthworks in Ashland County, Ohio. Each one is indicated by a letter, and opposite the same letter in the text will be found a description of the work.

A.—This square inclosure with the gateway to the southwest is situated in section 36, Clear Creek Township, on the line between the northwest and southwest quarters of the section, upon land owned by John and Thomas Bryte. It is about 400 feet long by 200 feet wide, and has

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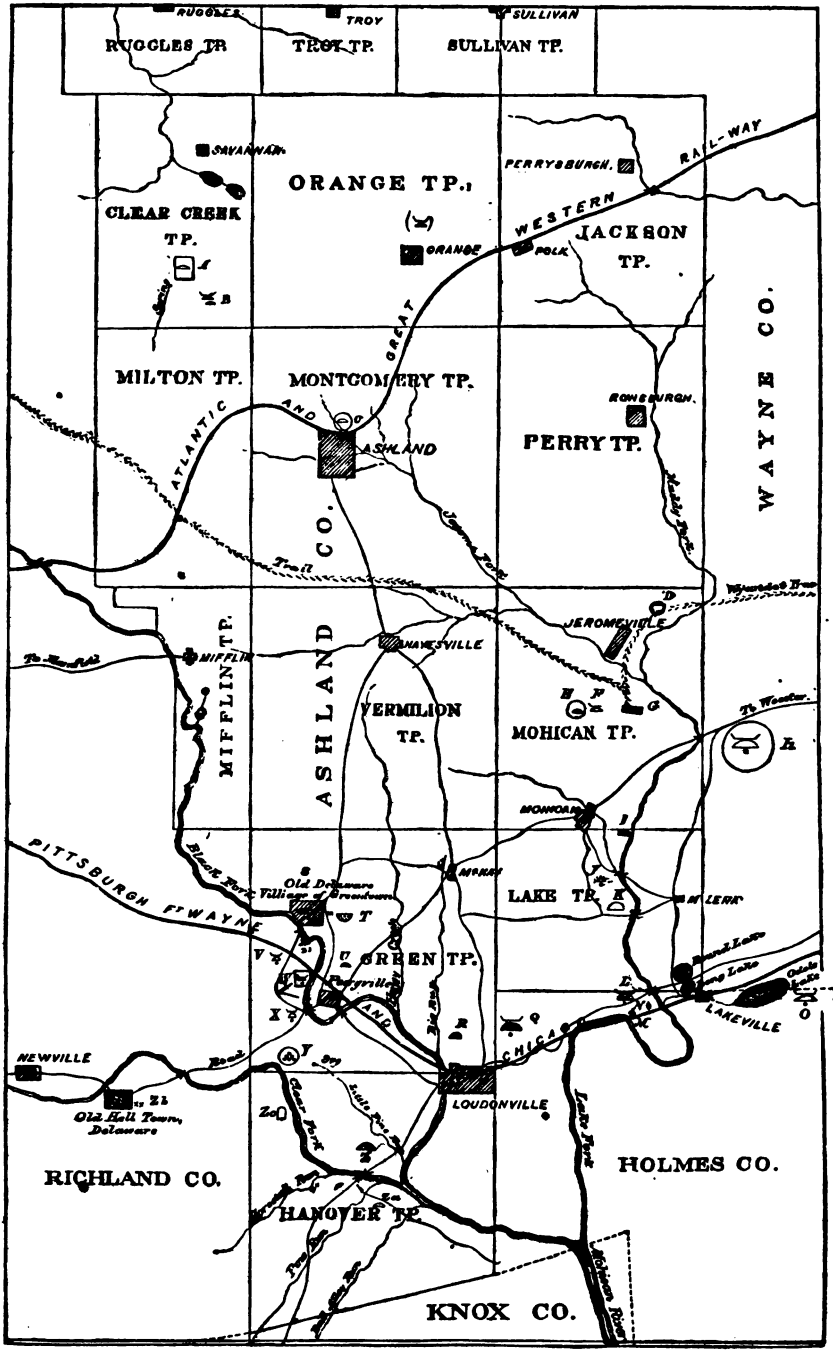
a gateway at the southwest corner near a very strong spring. In 1824 Mr. Bryte commenced to clear his farm. The embankment at that time was from 3 to 4 feet high and 10 feet wide at the base. Both the em-

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bankment and the area were covered with large oak trees. The place now goes by the name of Bryte's Fort.

B.—Two mounds stand upon a high natural elevation (90 feet) covering about 5 acres at the base, and being about 60 by 90 feet on the top, which is nearly flat. Each is 25 feet in diameter and 4 or 5 feet high. They are situated on the northeast quarter section 35, Clear Creek Township. At least one of them was explored as early as 1844, by Thomas Sprott and brother, who found a number of human skeletons in a kind of stone cist, upon which was almost a peck of red Indian paint. The bones were replaced.

C.—A circular inclosure containing 2 acres, more or less, is situated just north of the Atlantic and Great Western Railway, and within the city limits of Ashland. The farm was formerly owned by Henry Gamble. In 1812–'15 the first settlers found embankments from 3 to 4 feet high, and from 8 to 10 feet wide at the base. A forest of oak, hickory, sugar, and ash grew upon and near this work. It overlooked the valley to the south and east, and had a gateway at the southwest opening near a fine spring. The site has been plowed for more than fifty years; and scarcely a trace of it remained in 1878.

D.—At this point is a circular inclosure located near the north line of the northeast quarter section 9, Mohican Township, one mile east of Jeromeville.

E, F.—On the farm of Nicholas Glenn are a mound and an earthwork. Information might be obtained from John Glenn, jr., or from William Gondy, an old settler, both of whom live at Jeromeville, Ohio. The works are about 2 miles southwest of Jeromeville.

G.—The Mohican town called Johnstown was located here. In the years 1808–'10 it contained Delawares, Mohegans, Mohawks, Mingos, and a few Senecas and Wyandots. Captain Pipe, a Wolf Indian, ruled the village until he left it, in 1812.

H.—This large circular inclosure and burial mound are situated in Wayne County, just south of the road leading from Lake Fork to Blatchleysville, and just east of the road leading from McZena to Blatchleysville. These remains are upon a high, gradual elevation overlooking a vast range of prairie, northeast and southeast, as well as the valleys westward. The circle is a little less than one-third of a mile in circumference. At present the embankments are from 1 to 2 feet in height. The area and embankment are covered by the forest growth, which is not older than 60 or 70 years, the Indians having burned this region annually until about 1812, for the purpose of hunting. Years ago the mound was opened by unknown persons. In 1876 the author visited it, and found that an animal had burrowed into it and brought out a fragment of skull, which is now in his possession. Some time after, Mr. Thomas Bushnell, of Hayesville, made excavations in the mound and found only bones, among which was a well-preserved skull. The mound is 25 or 30 feet in diameter and 4 feet in height.

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I.—A small mound, 3 or 4 feet high and 15 feet in diameter, stands upon a very high hill, perhaps the highest land in the county, and is composed of stone and clay. It was excavated some years ago by Dr. Emerick and a Mr. Long, who are said to have found a skeleton in a kneeling or sitting posture, and a pipe, both near the center. The author was unable to learn what had become of the pipe. Messrs. H. B. Care and J. Freshwater made another examination in 1876, but found nothing. There is a large spring at the foot of the hill, on the east side, but it is nearly half a mile from the spring to the mound on the hill.

J.—This work is said to be located on the west side of the creek. The author has not visited the site.

K.—In 1876 the author, in company with Mr. J. Freshwater, made a slight examination of this mound. It is 25 or 30 feet high, oval in shape, and over 100 feet long. The citizens regarded it as an artificial mound, but we considered it a natural elevation of gravel drift. Excavations might change this view. The mound is located on the west side of the Lake Fork, and just north of the road and bridge leading from Mohican to McZena in Lake Township.

L.—A mound is situated on the lands of J. L. and Cyrus Quick, in Washington Township, Holmes County, Ohio. It stands upon an eminence which slopes gradually for half a mile southward toward the bottom lands of the Lake Fork; northward and westward it declines a short distince to a small valley extending to the southwest. It is about 5 or 6 feet high, and 30 feet in diameter. Some trees were growing upon the mound when the author first visited it, some twenty-seven years ago. The trees were, perhaps, not of more than one hundred years' growth, but were as old as the trees in the immediate vicinity; not far from it, however, were oak trees 2 and 3 feet in diameter. The mound was excavated about 1820–'25 by Isaac and Thomas Quick, Daniel Priest, and others. It is said that, upon making a central excavation, they found a wooden puncheon cist, together with some human remains, and ornaments of muscle shell, which appeared to be strung around the neck. All the remains are reported to have crumbled away on being exposed to the air. It is difficult to ascertain the facts concerning this excavation. It has been said that some pottery was found also. Additional remains might be disclosed by further investigation. The persons who made the excavation are dead.

M.—This mound, located a little southwest of mound L, on the lower ground about half a mile from the same, was probably of an equal size originally, but, having been plowed for nearly fifty years, it is now spread over quite a space. It is, however, still discernible from a distance, and shows the elevation from the flat surface of the field. The yellow clay presents a contrast with the darker soil of the surrounding land. No excavation had been made until 1877, when the author, aided by Mr. Freshwater, removed about 4 square feet from the center. We

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found tough, tempered clay, some bits of charcoal, but no remains. This could not be regarded as an examination, being of so small a character. Further work on this mound might unearth interesting relics.

N.—A lake is situated a short distance east of mound M, on the farm of D. Kick, Washington Township, Holmes County, Ohio. In draining this pond a *cache* of flint implements was discovered. Specimens of these implements may be seen in the Smithsonian collection. The remainder are in the author's possession. (See Smithsonian Report of 1877, article by H. B. Case.)

O, P.—There are mounds southeast of Odels' Lake, upon the summit overlooking the lake, on the farm of J. Cannon. They were excavated by Dr. Boden, of Big Prairie, Ohio, who has in his possession some teeth, jaw bones, and long bones taken from them. He says that they should be further examined. The author has not visited the mounds.

Q.—A mound stands on the summit of Dow's Hill, one mile northeast of Loudonville, just east of the Holmes County line. It was excavated about 1855 by Dr. Myers, of Fort Wayne, and D. Rust, who found a skeleton near the center, whose structure is of stone and earth. The top has since been leveled by the plow. In 1876, Mr. Lucien Rust made some excavations upon the site of the mound, and great numbers of stone were removed. At length a kind of pot or cist was unearthed, which was about 18 inches in diameter and 8 or 9 inches deep. It was formed of stone, and the edge was covered by other stones which made a roof over the pot. The removal of this roof or top showed that the cist was filled with charcoal, apparently closed while glowing coals. About 4 feet below this charcoal deposit human remains were found, reposing horizontally. Near the left hand was a perforated stone having the figure of a bird, resembling slightly the pheasant, scratched upon it. A part of a bone implement was also found. The bone, which is of firmer texture than the human bones, and is perhaps a part of the leg-bone of a deer, had been perforated, evidently with a stone drill. Lying across this lower skeleton and some distance above it were the remains of another. But little of the mound has been excavated, and further examination should be made. From the mound the view of the surrounding country is very fine. The mound proper has been obliterated for some years, but the site can be observed by a slight elevation and the great number of stones scattered about and upon it. There must have been a kind of hollow made in the Waverly shale which lies near the surface upon the underlying Waverly sandstone, of which the hill is composed, because when one digs the same depth elsewhere on the hill the shaly sandstone is penetrated. The stone implement is in the possession of L. Rust, Loudonville; the bones, bone implement, and charcoal are in the author's cabinet.

R.—This mound, similar to mound Q, is situated just north of Loudonville, on the summit of Bald Knob. For a long time it was supposed by the citizens of Loudonville to have been formed by counterfeiters in

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former times. The author excavated it in 1877, and found it a veritable mound containing fragments of human bones and of charcoal. Being encased with large sandstones, and composed of stone and earth, it is very difficult to excavate. As there has been a central depression for a great many years, what remains the mound V contained of a perishable character have probably been destroyed by the collecting of water. This site also commands a fine view of the Black Fork Valley.

S.—The settlers of 1808–'09–'10 found here a village of Delawares, the remnant of a "Turtle" tribe. Their chief was a white man, taken in infancy—Capt. Silas Armstrong. They removed to Piqua, Miami County, Ohio, in 1812, the site of the old burying-ground, now almost entirely obliterated by cultivation. It is located a few rods north of the Black Fork, upon a gentle eminence, in the southwest part of northeast quarter-section 18, Green Township. The southern portion of the site is still in woods, and the depressions that mark the graves are quite distinct. Henry Harkell and the author exhumed several of the skeletons in the summer of 1876. In some cases the remains were inclosed in a stone cist; in others small, rounded drift-bowlders were placed in order around the skeletons. The long bones were mostly well preserved. No perfect skull was obtained, nor were there any stone implements found in the graves. At the foot of one a clam shell was found. The graves are from 2½ to 3 feet deep, and the remains repose horizontally. A few relics, such as stone axes, arrow-heads, and a few bits of copper, have been picked up in the immediate vicinity. They are in the hands of the author. On the opposite side of the stream and some distance below, near the south line of southeast quarter section 18, Green Township, there are ancient fireplaces. They are about 15 inches below the present surface, and are formed of bowlders regularly laid. The earth is burned red. Great numbers of stones have fallen into the streams during its incursions upon the west bank. Some three or four of these fireplaces are yet plainly visible, but in a few years they will be swept away by the current. About half a mile east of the graves marked S is a small circular earthwork almost razed. It contained about 1½ acres, and had a gateway looking to the river, which is westward. It is situated upon the nearly level bottom land of the beautiful valley.

T.—Upon the high ridge separating the valleys of Black Fork and Honey Creek is a depression filled with large and small bowlders. J. Freshwater and the author removed them to some depth, but as the stones were heavy we desisted from further investigation. This point would command a view of the valley of the Black Fork, overlooking, as it does, the old village of Greentown; and by walking a few rods eastward on the same eminence a view of the valley of Honey Creek might be had. Most of the trees on this height are less than 100 years old. It may have been timberless during the occupation of this work. The excavation appears to have been about 15 feet in diameter.

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U.—There is a stone mound, like mound R, situated on a lofty eminence overlooking the Black Fork Valley northwestward, and eastward the valley near Loudonville. The author has never seen the work, but it has been described to him as a small stone and earth mound such as are usually found on high points.

V.—A short distance northwest of mound W, on the farm of L. Oswald, southwest quarter section 18, in the woods, is a mound about 30 feet in diameter and from 4 to 6 feet high. It was slightly opened at the center by the owner of the lands, who found part of a skull.

W.—This mound and earthwork are located upon the old Parr farm, now owned by C. Byers, in the northwest part of southwest quarter section 19, Green Township. The mound stands on the west side of the Black Fork, within 2 or 3 rods of the stream. It was quite large originally, perhaps 8 or 10 feet high and 35 to 50 feet in diameter. At present it is from 4 to 6 feet above the level of the bottom land and is spread over a considerable space. When the first settlers came, there was an earthwork running a little southwest from the mound for some 20 rods, then back eastward to the river. The place has been under cultivation for forty or fifty years and the work is now obliterated. The mound was encased with a wall of sandstone bowlders as large as a man can lift.

These stones must have been carried from the hill half a mile west, where they are found in place. The wall was carefully laid, as can be seen by excavations below the depth of the plow where the pile is still intact. The mound was examined in 1816 by some persons named Slater, who found in it bones, flint implements, a pipe, and a copper wedge which they thought gold. Accordingly they took it to a silversmith at Wooster, Ohio, who told them that it was copper, and bought it from them for a trifle. In 1878 the mound was explored by J. Freshwater and the author. The center of the mound, where not disturbed by former excavations, resembles an altar or fire-place where the fire had burned the earth to a brick-red. In the ashes and burnt earth were fragments of arrow-heads broken by the heat. The fire had been kindled on the mound when it was from 2½ to 3 feet high. No human remains were discovered in this last excavation. A few scrapers were found, which are in the cabinets of the above-named gentlemen.

X.—On the summit of a hill west of Perryville, and to the right of the road leading to Newville, was a mound, now entirely obliterated. In 1816–'20 it was opened by the Slaters, who found a pipe, human remains, and some other relics.

Y.—A large oval earthwork on the summit of the ridge between the valleys of Black Fork and Clear Fork. It is 210 feet wide by 350 feet long. About the center of the inclosure was a large pile of stone bowlders, most of which have been removed to the level of the ground. There is, however, a visible outline of the stone-work, which consisted of a paved circular space. No excavation has been made in either the stone or clay

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work beyond 1 or 2 feet in depth; consequently the character of the mound is unknown. A forest, containing oak trees over 30 inches in diameter and other large trees, covers most of the work, but a portion extends into a field and has been almost razed by the plow.

Z.—On a high hill directly north of the junction of the Black Fork and the Clear Fork, and overlooking the same, is a stone and earth mound composed principally of large sandstones from the immediate vicinity. Some twenty or twenty-five years ago it was explored by unknown persons. The author examined it again in 1877, but discovered nothing. A similar mound is said to have been located upon the hill south of the Clear Fork, just below the junction of Pine Run. The stone were hauled away and the site plowed over. (See Z *a*.)

Z *b*.—This is the site of Old Delaware village of Hell Town. It was deserted about 1782, the time of the massacre of Anaden Hutten. Graves were visible until two years ago; the field is now cleared and plowed. In the author's cabinet are two iron scalping-knives and an iron tomahawk which were thrown up by the plow; also the brass mountings of a gun, a gun-flint, a stone ax, and some arrow-heads. Dr. James Henderson, of Newville, Ohio, has in his possession several articles obtained from this site. The Indians formerly called their settlement Clear Town, and the stream Clear Fork; but learning the German word *hell*, for clear or bright, they changed the name to Hell Town.

Z *c*.—A rock shelter is located on the west side of Clear Fork, in the conglomerate sandstone of the Lower Carboniferous. It was explored in 1877 by L. Rust and the author, who found about 2 feet of ashes intermingled with a few animal bones and coprolites. No human remains were disclosed excepting a split bone, and even that is doubtful. The ashes continue deeper, and further examination might prove interesting.

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## EARTH-WORKS NEAR JONES' STATION, IN BUTLER COUNTY, OHIO.

By J. P. MacLean, *of Hamilton, Ohio.*

While I was engaged in examining the earth-works of Butler County, Ohio, I was informed by Mr. John W. Erwin that an ancient work was near Jones' Station. On repairing thither I was unable to find either the work or any one who had ever heard of it. I next attempted to find the papers of Mr. James McBride, but no one knew what had become of them. The record of the sale of McBride's effects gave no account of them.

During the month of December, 1879, I received a note from Mr. W. S. Vaux, of Philadelphia, stating that he owned both the cabinet and the archæological papers of the late James McBride. I immediately applied for that portion of the papers relating to the earth-works near

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Jones' Station. These papers were placed in my possession January 26, 1880. On the 27th of the month, in company with Mr. John W. Erwin, I started to locate the works. Although it had been nearly thirty-eight years since Mr. Erwin visited the spot and assisted in the survey, and made the original delineation, he recognized the spot and the plan of the works as preserved in the papers of James McBride.

These works were located on the southeastern slope of one of the highest hills in the vicinity. The hill is a detached one and surrounded entirely by one of the richest valleys in the State. Between it and the uplands toward the north was originally a swamp. This swamp was drained at the expense of and under the direction of the State. Through it passes the Miami Canal. The hill is composed of a yellowish clay, having been formed during that period known as the glacial or drift. Its summit is about 225 feet higher than the city of Hamilton.

The works are now entirely obliterated. There is not the slightest evidence that they ever existed. We searched in vain. They occurred in both Fairfield and Union Townships, on section 15 of the former and 9 of the latter. The township line passing through the works, if extended southward, would terminate at the foot of Broadway, in Cincinnati. The work marked A is wholly in Fairfield Township, while the township line passes through the center of the smallest circle, marked B. The same line passes on a fraction of the wall of the largest circle, C. On the summit of the hill, Fairfield Township, section 15, is a mound composed of yellow clay, about 5 feet high, from the top of which a commanding view of the surrounding country may be obtained. It probably belongs to that class of mounds known as signal stations. It would be impossible to tell the original height of this tumulus. The plow for fifty-two successive years has accomplished all this destruction.

James McBride came to this county in the year 1808; and, as he early took an interest in antiquities, it is probable he saw these works before the forest trees had been cut away. He and John W. Erwin surveyed the works May 7, 1842. The following is a verbatim copy of Mr. McBride's description:

"*Saturday May* 7, 1842.—Went, in company with John W. Erwin, civil engineer, and James McBride, jr., to an ancient work in Butler County, Ohio, six miles southeast from the town of Hamilton, on the lands of James Beaty. The work is situated principally on section No. 9, town 3, range 2, M. R., about 30 poles south of the N. W. corner of the section. On measuring the main part of the work it was found to be a true circle 3 ch. 5 links in diameter. The ground was cleared some 14 or 15 years ago, and has been cultivated since that time, consequently the height of the embankment has been much reduced. Previous to cultivation the embankment was fully three feet high above the natural surface of the ground. Inside of the embankment was a ditch two feet deep, making a perpendicular height of about 5 feet from the bottom of the ditch to the top of the bank.

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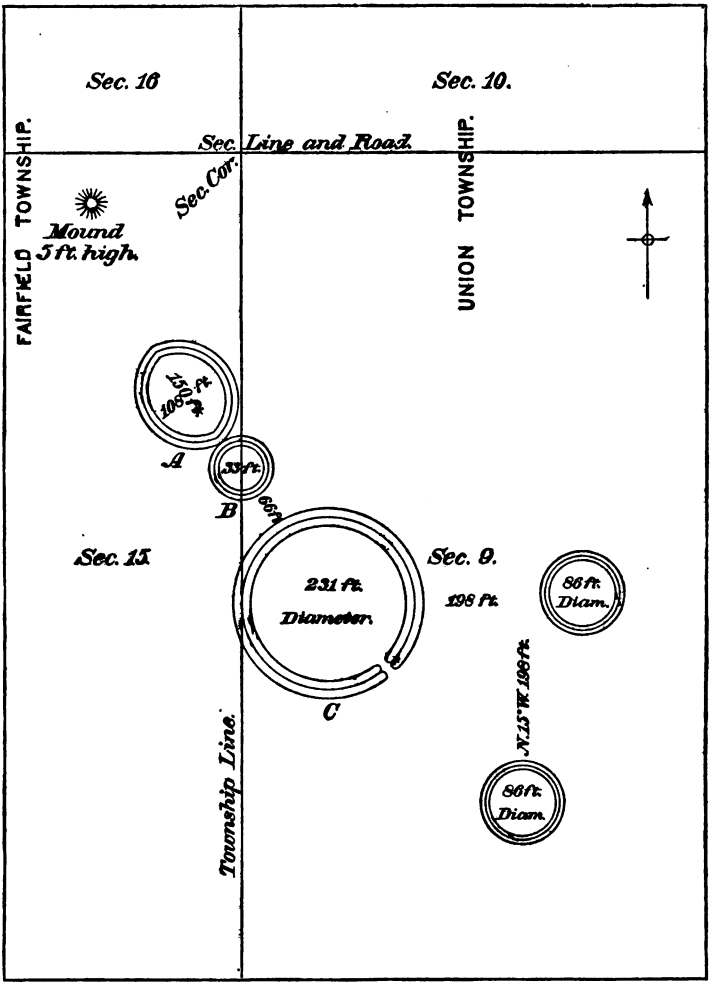
"Three chains east of this work is another circular work 1 ch. 30 links in diameter, and from this in a direction S. 15° W. three chains distant is another circular work of the same dimensions, viz, 1 ch. 30 links diameter, and also the same distance, viz, 3 ch. 00 links from the center or main work.




"At the distance of one chain N. W. from the center or main work is another small circular work two poles in diameter, and adjoining and touching this is still another enclosure, of an oval form, from 2 ch. 30 links by 1 ch. 70 links in diameter, extending in a N. W. direction.

"The embankment of the smaller works before reduced by cultivation was upwards of two feet high above the natural surface, with ditches on the inside eighteen inches deep.

"On the S. E. of the main work is an opening in the embankment com-

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municating with the smaller works to the S. E. Probably communications might have existed throughout from one work to the other, though they cannot now be distinctly traced.

"The embankments of these works are of a bright yellow clay, differerent from that which appears on the surface of the surrounding ground, hence the form of the works can be distinctly seen and traced as far as the eye can see them."

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## MOUNDS IN BOYLE AND MERCER COUNTIES, KENTUCKY.

By W. M. Linney, *of Harrodsburg, Ky.*

In the counties of Boyle and Mercer, State of Kentucky, there are a number of mounds, graves, &c., which were constructed by former inhabitants of the country, and many aboriginal implements have been found. On the map of Boyle and Mercer Counties I have located all points of interest that I have been able to learn. They will be alluded to more particularly in the following notes by the letters that are connected with them. The point of greatest interest (A on the map) is situated on the west bank of Salt River, in Mercer County, a little north of its union with Boyle County, on a farm owned by Dr. Thomas Hyle. The first notice given of this point is found in "Collins' History of Kentucky," under the head of Mercer County. Speaking of ancient towns and fortifications, it says: "There are two of these, both on Salt River, about 4 miles above Harrodsburg, containing ditches and a mound 10 or 12 feet high, filled with human bones and broken pieces of crockery-ware. On one side of the mound a hickory tree, about 2 feet in diameter, grew and was blown up by the roots, making a hole 3 or 4 feet deep. Its lower root drew up a large piece of crockery-ware which had been on some fire coals. The handle was attached to it, and human hair lay on the coals. This was probably a place of human sacrifice. The other ruins were about a mile and a half above this, both being on the west bank of Salt River. There is no mound near this, but only the remains dug out of ditches."

The ground has been cleared, and the continual cultivation of the land has filled up the ditches and removed all traces of any lines that once existed. The mound has also been removed by the plow. From it have been taken, as cultivation yearly went on, the bones of a number of human skeletons, none of which were retained, few of them being in a good state of preservation; the skulls crushed to fragments and the soft ends of the bones, with few exceptions, gone entirely. I do not know that any relics have been taken from the mound proper, except some shell beads. The river bank here is only about 15 feet high, and the slope back from the river is not more than 2°. The mound stood 200 yards from the stream. Between those points there must have been a village of huts or some form of habitation; for even now, when the

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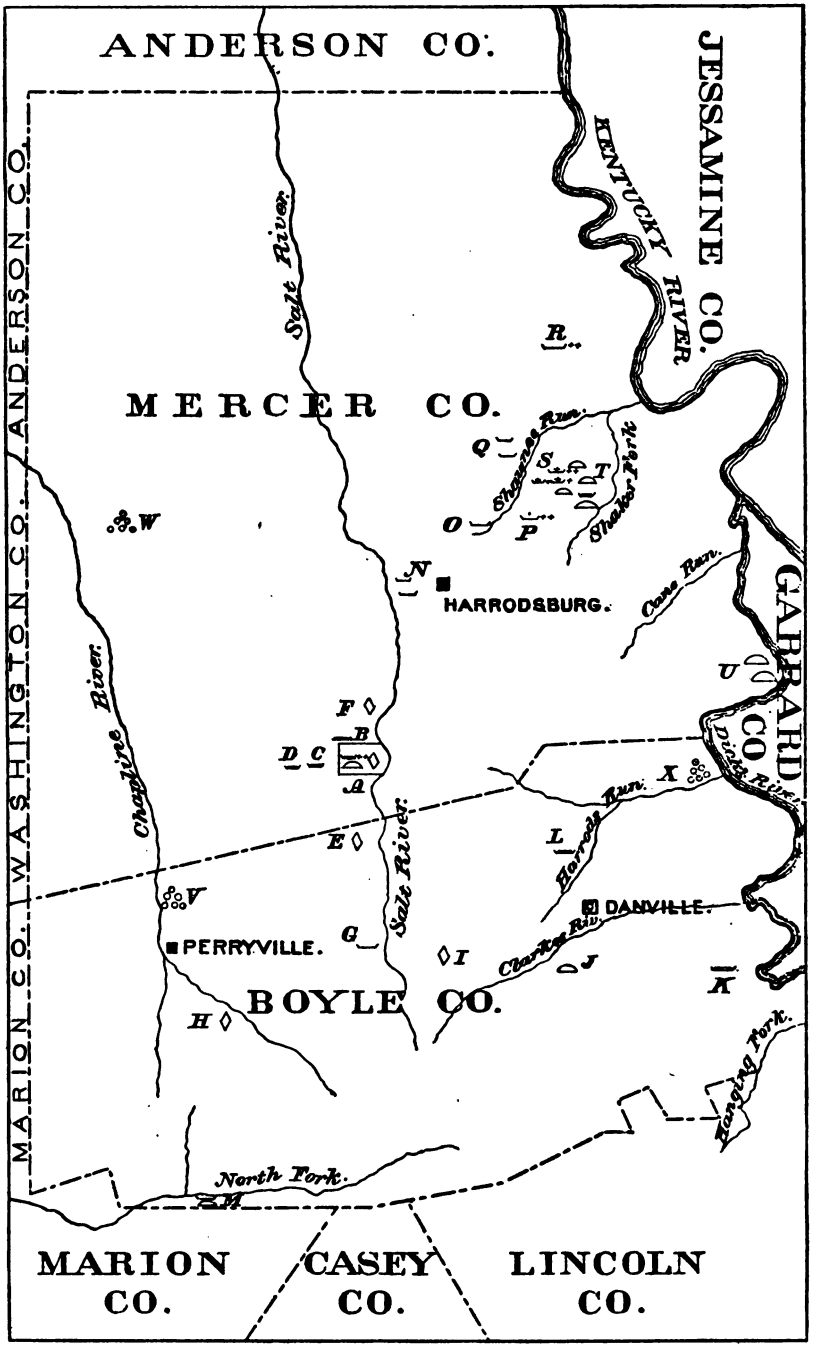
ground is freshly plowed, there is a regular parallelogram, where the uniform lines of black earth, charcoal, and burnt bones show the former presence of fires long continued at that point. Within this area have

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been found a great number of specimens of broken crockery, plain and ornamented in crossed lines; grooved axes of greenstone; celts in greenstone, jasper, agate, hornstone, and limestone; pipes, arrow and lance heads, chisels, grinding stones, pestles, sinkers, flint flakes and cores, ornaments in slates and other colored stones; bones of fish and many animals, horns of deer and elk, teeth of bears, &c. Some of these may have been thrown up by the plow and scattered over the space near the mound. From the number of fragments of various stones, it seems that there was a workshop here, and so I have located one on the map. The mound was built of earth taken from the vicinity, and there were evidently some large stones in connection with it, but how they were placed is not known. B, C, D were within a mile of A, and were single graves. They have all been opened, and each contained one skeleton, without implements or ornaments so far as known. In one, the body seemed to have been buried horizontally, on the right side, with the head to the east; the position of the others is unknown. There seemed to have been a stone cist erected on or near the surface of the ground; and then rocks appear to have been set on edge around it, until a space 10 or 12 feet square was inclosed. If ever covered with earth, time has removed it down to the rocks. B is on the farm of Dr. Thomas Hyle, and C and D on that of Cornelius Terhune. E and F are points on Salt River, above and below A, where remains of pottery, &c., have been found; but their real character cannot be determined. E is on the farm of John Ludwich, in Boyle County, and F on that of Mrs. Lewis.

G is a grave on the farm of Thomas Knox, but I have not seen it. From description it is like B, C, and D.

H is only a point marked by great numbers of flint chippings and broken arrow-heads.

I represents a space on a farm owned by W. B. Cecil, where a great many pipes, axes, &c., have been found.

J is a mound of earth on the farm of the Misses Craig, about 1½ miles south of Danville, in Boyle County. It is some 5 feet high and 50 feet in circumference. It has been opened, but I know of nothing obtained from it.

K is located on the farm of John F. Yedger. It has been opened, and is similar to B, C, D.

L is in Boyle County, on the land of Wyatt Hughes. It was destroyed by excavating a road-bed for a railroad; and seems to have been like B, C, and D.

M is a small earthen mound on the southern bank of Rolling Fork, Boyle County. It has been razed by cultivation. Some bones, a grooved ax, and a few arrow-heads of hornstone were disclosed.

N is said to be the site of two graves, and is just west of Harrodsburg and "old Williams" place. From what I can learn the graves are like B, C, D.

O is a single (?) grave with stones set up around it. I have not examined it, but from appearances it is like B, C, D.

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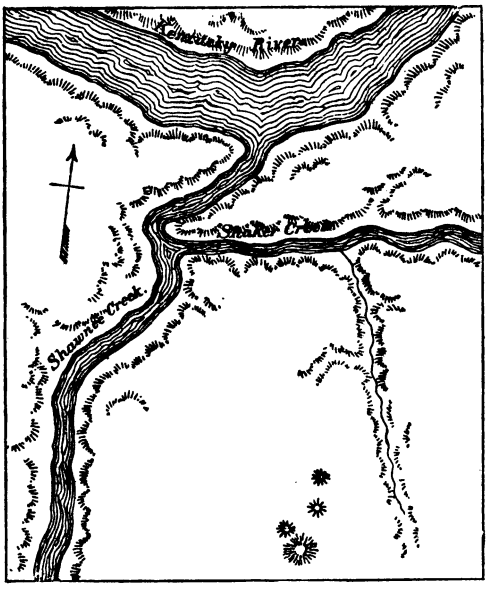
P is an earthen mound, on the farm of J. A. Shuttleworth. It is 4 feet high and 50 feet in circumference, and was opened in 1807 or 1811 and later. From an old man, who was a boy when it was first opened, I learn that a number of bodies had been buried in it, and that an ax or two were found. On the night of the day on which it was opened occurred the earthquake of that year, and the whole neighborhood thought that the Indians had come after them for disturbing their bones.

Q was one or two graves, now obliterated, on the farm of Achilles Davis.

R is a point on the farm of Dr. Walter Davis, where some relics were found in digging the foundation of a house. A lot of bones were near these relics.

S is the site of three graves covered with stones placed on edge, and is on the farm of George Davis, sr. The two near each other have been opened, and a number of human remains were exhumed from each. They had, seemingly, been buried with their heads together and their feet radiating from this center. Plates of mica were found with the crushed skulls, as if they had been placed over their eyes. Only one implement was obtained here. A bone had apparently been buried with one of the bodies, and, when discovered, it was lying upon the arm, at the elbow, and parallel to it. The third grave has not yet been examined, but will probably be explored in the spring.




T is a group of four earthen mounds on the farm of Thomas Coleman. They have all been excavated at some time. The last examination took place in July past, and yielded one skeleton, and a copper bead almost destroyed by oxidization. Their relative positions as to streams and to each other is shown in diagram T. (See also the accompanying plan.)

U is the site of two mounds 8 feet high, and 60 or 70 feet in circumference, on land owned by Mr. Hugely, upon the bluffs of Dick's River. The mounds seem to be composed of gravel, earth, and limestone. Several persons have examined them, and pronounced them mounds. Partial excavations have been made, but without success. Poplar trees (*Liriodendron*) 2 feet in diameter are growing upon them. I am disposed to think that the mounds are the remains of lime-kilns made in the first settlement of the State; at any rate the limestone in them has been burned.

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V was a large pile of rocks, giving no evidence of ever having been covered with earth. It was opened and some skeletons were found, probably those of Indians killed in some attack on Harrodsburg.

W and X are similar to V.

The above list includes all the points of much interest in these two counties. Nearly every spot mentioned has been examined, and the relics carried off or destroyed. The great majority of those relics, such as pipes, arrow and lance heads, grooved axes, and celts, have been plowed up isolated in fields all over the counties; but the larger number have been found on the farms contiguous to Salt River. No shell heaps have been noticed except at A, where the common mussel of Salt River seems to have been used for some purpose other than pottery manufacture, perhaps as food.

Nothing is known as to our caves or cliff shelters having been used for dwellings. A cave east of Danville, on the farm of Samuel Stone, contained some human skeletons; but as the remains had been thrown down into a sink-hole without other opening, and as there were no implements, I suppose that the persons were Indians, or perhaps murdered whites of a comparatively recent date, and not mound-builders. The bones were in a good state of preservation. Nowhere in this part of the State has anything resembling masonry been observed, to my knowledge.

As far as I can learn, no carving, engraving, or sculpture has been discovered in those counties; but in the Deaf and Dumb Institution at Danville, Professor Dudley, principal, there is a carved image or rather bust of Aztec type, which was plowed up in Marion County, Kentucky. Rock paintings and inscriptions are not found here. The dead are discovered both in mounds and in isolated graves. Some contain one individual, others more. It is difficult to determine the position of the bodies when interred, as the pressure from above and the trees over them have forced them out of place. Some appear to have been buried in a sitting posture, some were stretched out, and others evidently lying on their sides. They were laid, in most cases, toward the east, sometimes toward the west, and again in every direction like spokes in a wheel. A few were placed in cists, others in earth only. Generally only a few of the more solid bones were preserved. At one point in Boyle County some arrow-heads were turned up by the plow, but they were lost or thrown away. No large places are known where flint implements have been manufactured; but chippings, evidently broken off by mechanical means, show that arrow-heads have been made in limited quantities. I am unable to learn whether or not the pottery found at A had been made on the grounds. The presence of many fragments, the quantities of decaying mussel shells, the balls of sand carried from the river, and the proximity to suitable clay all render it likely; yet there are no places, that I could see, which give any reliable evidence of its manufacture.



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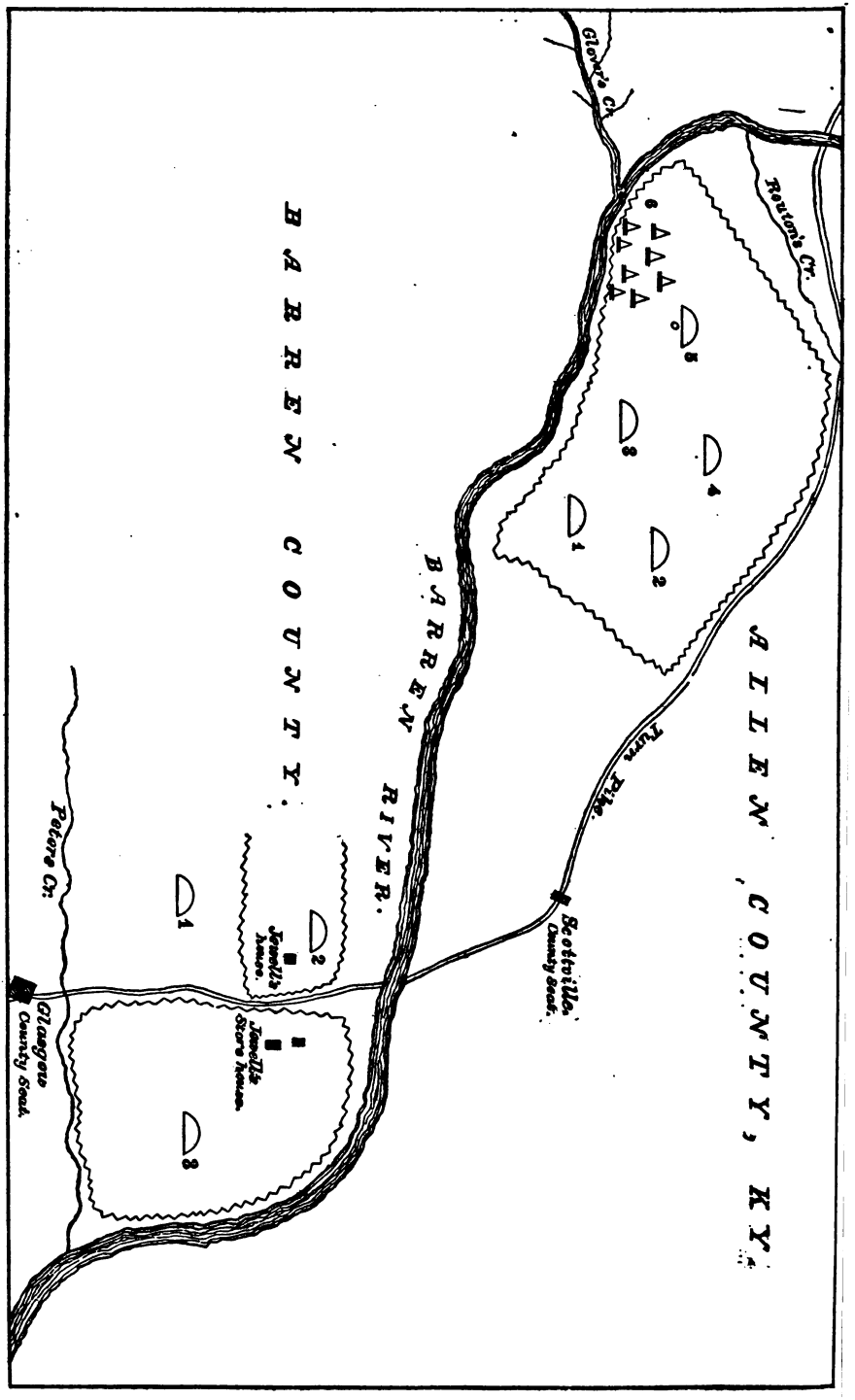


PLAN 1.

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## MOUNDS IN BARREN AND ALLEN COUNTIES, KENTUCKY.

By R. B. Evans.

I. *Mounds in Allen County.*—The figures in the text refer to the accompanying map. Nos. 1, 2, 3, 4, and 5 are mounds on Barren River, and near the mouth of Routon's Creek. They are inclosed in one corner of a cultivated field, though covered thickly with large trees. No. 5 was explored about fifty years ago, and some stone implements and a silver pipe were found. The author does not know what became of them. About two years ago he thoroughly examined No. 1, and discovered many large bones, which, however, were much decayed. The vault was 10 feet deep from the top of the mound, and 8 feet in diameter. It was round, and walled up with stones like a well. Every 2 feet was a layer of large flat rocks, and between these layers were human remains. The bottom was made of stones laid edgewise, and, being keyed in with small stones, was consequently very tight. Old farmers in the neighborhood say that Nos. 1, 2, 3, and 4 have never been excavated. No. 6 is a cluster of graves which were formed of stones placed edgewise. Some of the graves are long and others short, the longest being 8 feet and the shortest 2½ feet in extent. The author opened one and found some human bones in a very decayed state.

II. *Mounds in Barren County.*—Nos. 1, 2, and 3 are mounds on Barren River, at the mouth of Peter's Creek. From No. 3, the largest, a great many human bones and several stone implements have been taken. The author has one specimen of the latter. Nos. 1 and 2 are not so large, and have never been explored. They have been seen by Professor Putnam, of Cambridge. The mounds are bare of timber. No. 3 is now used as a graveyard by J. F. Jewell, the owner of the land.

III. *Ancient town and cemetery in Barren County, Kentucky.*—The accompanying diagram, Plan II, represents the location and details of an aboriginal town and burying-ground on the Barren River, in Barren County, Kentucky. The work occupies a bluff 60 feet high. The sixteen circular figures are lodge sites, partly raised on the outer rim and depressed in the center. In the center of each, a foot beneath the surface, were found coals, the grain of the wood being easily distinguished as oak and poplar. The diameters of these rings average about 18 feet. The other figures represent mounds. These works are now in the virgin forest. One of the mounds was opened by the author, but a detailed account of the exploration will have to be deferred.

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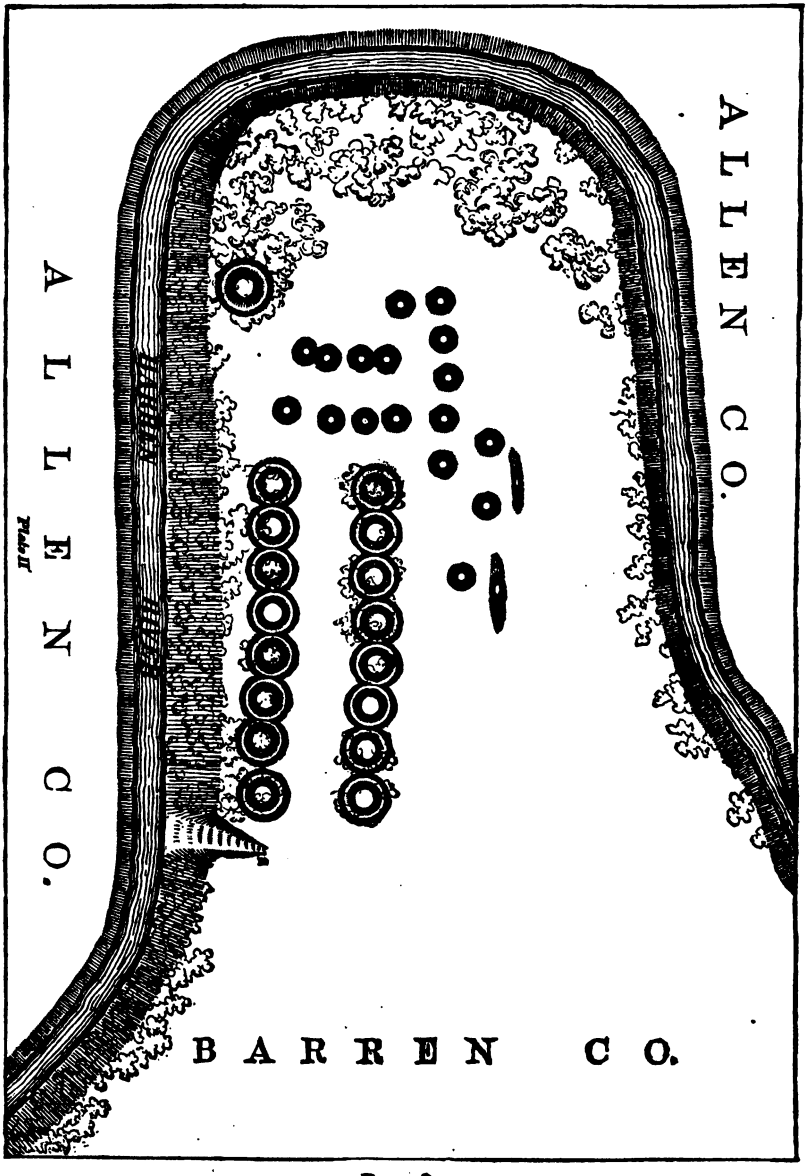


PLAN 2.

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## MOUNDS ON FLYNN'S CREEK, JACKSON COUNTY, TENNESSEE.

By Joshua Haite, Sr., *of Jackson County, Tenn.*

The valley in which these mounds are situated is on the east bank of Flynn's Creek, which empties into the Cumberland River, and is 3 miles above the mouth of the creek and 1 mile south of the river. The valley is 4 miles west of Gainesboro', the county seat, and near the center of a section of country that abounds in mounds and graves. This valley which is full of these graves, contains near 100 acres, and is the site of the village called Flynn's Lick. There are five limestone springs, one sulphur spring, and a salt spring. From the number of mounds of earth, stone, and shell, it is evident that it has been a large town and a place of note among the inhabitants of that day. A further reason is that the valley is easily approached from every direction. The valley is full of graves, placed as close as they can be in the ground. It has been in cultivation sixty-five years. Before it was cleared it was covered with a dense forest of trees, some of which are from 4 to 6 feet in diameter. Even on the tops of these mounds trees were standing (of the oak and poplar species) measuring 4 and 5 feet in diameter. At the time the valley was cleared it was not known that there were any graves there.

The graves are of all sizes, varying from 18 inches to 6 feet in length and the usual size in width. The coffins are made of slate-rock slabs (which now seems to be plentiful 4 miles up the creek, where there is a large quarry), and are generally neatly polished. The bones and pottery are now found from 18 to 20 inches below the surface of the ground. The coffins are constructed in the following manner: They first placed on the bottom of the grave one or two slabs of slate-work neatly polished and jointed closely together in the middle when they had to use two of them; they next placed one at the head and one at the foot of the grave; then they set up one or two, as the case required, on edge on both sides, neatly fitted together in the middle and at the ends, which forms a box. They next took one or two pieces, as the size of the coffin demanded, neatly polished and jointed together in the middle and at the ends, and placed them on for the lid, projecting on all sides from 2 to 4 inches. Occasionally we find a grave where they have used limestone instead of slate rock.

On the east side of the creek, about 100 yards from its bank, is the grand earthen mound, which is larger and higher than any of the others in the valley. All the graves as a general rule face this grand mound; but occasionally, owing to the rock in the ground, this rule is varied and the direction changed, showing that closeness or compactness was their leading idea.

The mounds referred to in this valley and vicinity are composed both of earth and stone, and are found on both sides of the creek. The

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largest earthen mound, which I call the grand mound because all the graves are facing it, is about ninety feet in diameter, and at this time about 4 feet high; but when first discovered by whites it was 5 or 6 feet high. This mound has not yet been examined, but others in the valley, not so high but larger in diameter, have been looked into and were found to contain graves, pottery-ware, pipes and arrow-heads made of dirt or cut out of rock. These are found in the graves in the mound and in those around it.

On a hill adjacent to the valley, about 200 feet high, are six stone mounds constructed of rough limestone rock. These mounds are situated about 300 yards east of the valley. They are about 20 feet in diameter and 2½ or 3 feet high. Four of them have been examined, and all of them were found to be full of human bones and pottery ware, but not so close together as the others. The graves were constructed, or covered over with rock, differently from the others. The corpse seems to have been put in first, and then rock slabs set up and placed together at the top in the shape of the roof of a house. In this way was the place filled with graves all over a certain spot, and then rough stone piled on until the mound was formed. I have spoken of only six mounds on this hill, of this kind; but there are many in this vicinity of this kind, but they have not been examined. Near the center of the mound examined by me, in a grave, were found bones of a human being charred perfectly black, around which were placed all the others.

On the west side of the creek is a bluff in which were found several holes, and on examination one of them was found to lead into a cave which has been explored for about 100 yards. This cave contains several apartments which are dry, and within this are found a great many human bones, some of which are still in a state of preservation.

A female skeleton was taken from a grave found about 80 yards west of the mound that I have designated in this letter as the grand mound. This skeleton was lying with the face towards the mound, with a pipe in her right hand resting on her right thigh. With this skeleton I found in opening the grave an infant child lying with its feet against the thigh bones of its mother. When first opened this child's skull-bone and other bones were in perfect form, but as soon as the air came in contact with it it broke into lime, or powder. This female evidently died in childbirth, the feet of the fœtus coming first. This female we are led to believe, from the pains taken in burying her, must have been of note amongst them, for I found in disinterring this skeleton that the remains were deposited in a wooden coffin, and then this one was put into one of neatly polished rock. A jug was found, with the mouth down and the bottom upwards, placed against the skull-bone. The stone with a hole in the center, which is called a corn-muller, I found about 80 yards from the grand mound. This was plowed up and found, among a large number of human bones in a decayed condition, upon the top of a small mound in the valley. The pottery, of the character sent, is found in all the graves and in a similar condition.

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## ANTIQUITIES AND ABORIGINES OF TEXAS.

By A. R. Roessler, *of Washington, D. C.*

In my frequent walks, some years since, along the beaches of the bays and inlets of the Gulf of Mexico, a few miles south of the Guadalupe River, I rarely failed to find a number of aboriginal relics—especially immediately after the ebb of a high tide. I have also found many about the bases of the sandy hillocks, or "dunes," which have been heaped up by the winds in many places along the coast. I have occasionally found large flints; but these were probably used for harpoons. Some of these arrow-heads are very rudely wrought, while others, particularly a very small kind, are of exquisite finish, with a point as sharp as a lancet, and the cutting edges finely and beautifully serrated. Most of the specimens collected by me had necks, or shanks, by which they were fitted into the shaft; a few, however, were without this appendage, but were either grooved or beveled on both sides of the base of the tongue. The flint pebbles, from which these arrow-heads were chipped, were probably obtained from 30 to 40 miles inland, where they abound in several localities. All the Indian tribes of Texas, when it was first colonized by Americans, used metallic arrow-heads, which they had probably substituted for flint ones nearly a century before, or not long after the establishment of the missions and military posts of San Antonio and La Bahia, where they doubtless obtained copper, brass, and iron, all of which metals they used for pointing their missiles. Fragments of earthen pottery are coextensive with the flint relics. But they bear evidence that our aborigines were never much skilled in the ceramic art.

The Indian dead usually receive very shallow sepulture. Often the Texas tribes do not bury their dead at all, but merely pile logs or stones upon their bodies, which are soon extricated and the flesh devoured by beasts of prey. The bones being thus left to the action of the elements, rapidly decay. Hence the osseous remains of the aborigines are rarely found far inland, but in various places along the coast the winds have performed the rites of sepulture by blowing the sand upon the dead. At Igleside, in 1861, human bones were disinterred at two localities more than a hundred yards apart, from a depth of 8 feet; and recently, in October, 1877, others were discovered in a sand hill, or "dune," near what is locally known as the "False Live Oak," in Refugio County. About a month after the discovery I went to the spot and found that a large quantity of human bones, including several skulls, had been exposed by the caving of the "dune;" but being much decayed, had broken to pieces in falling, and quickly dissolved in the Gulf tide at the base of the "dune." I saw for 40 feet along the face of the steep slope, from which the sand had slidden, a number of human bones and skulls projecting at various angles. One skull, which was better preserved

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than the rest, was of medium size and remarkably round. The others seemed of similar size and type. The teeth of all were well preserved, and did not exhibit any appearance of having been faulty during the lifetime of their owners. None of the bones seemed to have belonged to persons above the average size, with the exception of one femur. Neither the vertebral nor pelvic bones, the ribs, the omoplates, nor the bones of the hands and feet were preserved. These human remains were from 5 to 7½ feet beneath the surface of the ground, and 10 or 12 feet above the level of the bay.

After an interval of about six weeks, I again visited the spot. About 2 feet of the hill had caved away since my first visit; but the bone deposit was still unexhausted, for I found three more skulls and several limb bones, all of which broke into fragments in extracting them from the compact sand.

I was disappointed in not finding stone arrow-heads in the caved sand. But my search for them was not thorough. There is no reason, however, to doubt that these are aboriginal remains. Their imperfect state of preservation in any kind of earth, very conservative of organic substances, alone warrants the conclusion that they are ancient, which is reinforced by an argument which I will here state. These remains are found at the southern extremity of a sand ridge about 2 miles long from north to south, and varying in height from 20 to 40 or 50 feet, and which was evidently formed while the gulf beat directly upon the shore of the mainland. But ever since the long, sandy islands extending parallel with our coast were heaped up by the action of the waves and currents of the sea, the only communication between the gulf and the interior bays, or lagoons, has been through a few narrow channels called "bayous." The consequence is, that the sandy materials of which the "dunes" are formed, instead of reaching the shore of the mainland as in former ages, are now deposited on the gulf side of the islands and blown up by the east and southeast winds into hillocks similar to, but generally less elevated than, those which were formerly heaped by the same agency upon the mainland.

Now, on the assumption that these human remains, in accordance with the universal custom of North American savages, were only interred to the depth of 2 feet at most, several feet of sand must subsequently have been blown over them to account for the depth at which they were found, and the sand for this purpose must have been transported to the adjacent beach by the currents of the gulf. Hence, I conclude that the remains were deposited in the "dune" before the gulf was cut off from the mainland by the formation of the chain of island barriers above mentioned. The sand ridge containing the osseous relics has been preserved from the wasting effects of the winds by the thickets of dwarf oak and sweet bay with which it is overgrown. Some of the live oaks at its eastern base are of sufficient girth to indicate an age of two centuries. Other oaks of the same species a short distance south

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of the "dunes," and very near the bay, are of much greater antiquity. All these trees must have grown up since the Gulf retreated behind Matagorda Island, which at this point is about 8 miles distant from the mainland. From all of which it follows as highly probable that the human remains, which I have described, were inhumed at a period when the broad waves of the sea resounded along the shore of the mainland, and before the sail of a ship had gleamed on the Gulf of Mexico.

Both history and tradition preserve the names of several tribes of Texas Indians, which had become extinct or had been blended with other tribes before the State was first colonized by Anglo-Americans, at which period, A. D. 1821, the only tribes with which the settlers came in contact were the Comanches, Wacos, Tawacanies, Ionies, Kecchies, Lipans, Tonkaways, and Carancaways. Of all these tribes the last named was the most remarkable. They inhabited the coast, and ranged from Galveston Island to the Rio Grande. The men were of tall stature, generally 6 feet high, and the bow of every warrior was as long as his body. These Indians navigated the bays and inlets in canoes, and subsisted, to a considerable extent, on fish. They were believed by many of the early settlers to be cannibals; but it is probable that the only cannibalism to which they were addicted was that which was occasionally practised by the Tonkaways, if not by all the tribes of Texas. This consisted in eating bits of an enemy's flesh at their war dances to inspire them with courage. A dance and feast of this kind I once witnessed at a settlement on the Colorado, where the Tonkaways were temporarily camped. A party of its braves on a war tramp slew a Comanche, and upon their return to their tribe brought with them a portion of the dried flesh of their slain foeman. This human "tasajo," after being boiled, was partaken of by the warriors of the tribe with cries and gestures of exultation. Their thievish and murderous propensities early involved them in war with the settlers of Austin Colony, by whom they were repeatedly defeated with severe loss, in consequence of which, about the year 1825, they fled west of San Antonio River, whither they were pursued by Austin at the head of a strong party of his colonists. When he arrived at the Manahuila Creek, 6 miles east of Galliad—then called La Bahia—he was met by a Catholic priest of that place, who bore a proposition from the Carancaways, that if Austin would desist from hostilities they would never in future range east of the San Antonio.

Austin agreed to this proposition and countermarched his force. The Carancaways, however, did not long keep their promise. A few years afterwards several parties of them returned to the Colorado, their favorite resort, and committed divers thefts and atrocious murders, for which they were again severely scourged by the colonists.

Efforts were long made by the Catholic missionaries to christianize these savages, and the mission of Refugio, 30 miles south of Galliad, was, I believe, founded for that special purpose. But the Carancaways

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were proof against all civilizing influences. At length, about the year 1843, forty or fifty men, women, and children—the sole remnant of this tribe, which twenty-one years before numbered nearly a thousand souls—emigrated to Mexico, and were permitted to settle in the interior of the State of Tamaulipas. At this time it is not improbable that the Carancaways are almost, if not quite, extinct. I am unable to ascertain whether any of the other tribes mentioned before in this paper are also verging on extinction, but it is well known that they have all rapidly diminished in numbers since they came in contact with civilization, and the conclusion is inevitable that in a score or two of years all the smaller tribes will become as extinct as the mammoth and the mastodon that preceded them.

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## MOUNDS, WORKSHOPS, AND STONE-HEAPS IN JEFFERSON COUNTY, ALABAMA.

By William Gesner, *of Birmingham, Alabama.*

Three mounds are to be seen in township 17, range 1 west, of Jefferson County, about 4 miles north of Birmingham, and west of the South and North Alabama Railroad, in that portion of Jones Valley through which flows Village Creek from east to west. They are on the north side of the creek where it is forded, on the Birmingham and Huntsville wagon road, and west of the machinery and buildings of the Birmingham Water Works Company about 1 mile. The largest of them is nearest to, and visible from, this road toward the west. The one, which is the most southerly of the group, appears to be about 30 feet high, conical, and about 100 feet in diameter at its base; the others, distant from it and from each other, about 300 yards, are not in a direct line with each other. The second one north has not one-third the dimension of the first, and the third is much smaller than the second. They are situated on the plain of one of the most fertile tracts of land in Jones Valley, which has been cultivated for more than fifty years.

Five Mile Creek, also flowing from east to west, through the hills, from out of this Jones anticlinal Valley, along the base of low ridges of Millstone Grit, bordering the Warrior Coal Field on the southeast, being crossed at Boyles Gap, on the South and North Alabama Railroad, places these mounds between two streams, abounding in fish, and tributary to the Black Warrior River. Their immediate locality is unsurpassed by any other region of the State for number, size, clearness, and coolness of the springs, issuing from out both the ridges of Silurian quartzites, and beds of limestone outcropping in the valley. They have been injured to some extent by hunters and farming operations, particularly the smallest one, but the largest one has oaks and other trees of large dimensions on it, growing without thriving. No explorations having been made of any of them, their arrangement and composition remain unknown.

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*Workshops.*—In township 18, range 7 east, of Talladega County, on the headwaters of Talladega Creek, at the eastern end of Cedar Ridge, (a spur of the Rebecca Potsdam sandstone Mountain) in the old fields where the Montgomery Mining & Manufacturing Company's, Sulphur, Bluestone, Copperas, and Alum Works were situated, wagon loads of quartz fragments, broken arrow-heads, and spear-points, cover the ground; but on a much larger scale appears to have been the manufactory of these implements in township 19, range 27 east, of Lee County, on the Columbus Georgia branch of the Western Railroad east of Yongesborough; for in the fields, on the southeastern side of a low ridge called Storees Mountain, many acres are covered with the broken quartz, in every variety of that mineral found in this hill, from transparent rock crystal to jasper and chalcedony; among which occasional good implements occur.

*Stone-heaps.*—In township 23, range 14 east, of Chilton County, on the middle prong of Yellowleaf Creek, about 3½ miles northeast of Jemison Station, on the South and North Alabama Railroad, there are three stone heaps. The first one is about 100 yards from and on the west bank, being about 20 feet in diameter, and from 4 to 5 feet high at the center, with a post oak and pine growing on it of ancient appearance, and each of them about 8 inches in stump measurement. Two others nearly west of this, distant about 700 yards on the eastern brow of the ridge, are about 100 yards apart; one of them about 10 and the other 20 feet in diameter at the base and from 4 to 5 feet high at the center, which, though in the primitive forest, have no trees growing on them. Another, 1 mile east of these, on a more westerly ridge, in the same range and township, is about 50 feet in diameter at the base and over 5 feet high at the center. In township 21, range 3 west, on the quartzite ridge east of Siluria (about 1 mile), on the South and North Alabama Railroad, occurs a smaller stone heap than any of those before mentioned, supposed to be the grave of an Indian warrior.

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## ABORIGINAL SOAPSTONE QUARRY AND SHELL-HEAPS IN ALABAMA.

By Charles Mohr, *of Mobile, Alabama.*

In the course of a mineralogical trip through the region of metamorphic rocks in this state, stopping at Dudleyville, Tallapoosa County, I heard much of an ancient soapstone quarry, worked by a race of which, according to the statements of the first settlers amongst the Creeks and Muscogees, no tradition existed among these tribes. I was urgently pressed, but could not go, to visit the quarry myself, so it is due to Dr. Johnston, of Dudleyville, that I am enabled to make this contribution. The gentleman writes: "I picked up the large fragments near excava-

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tions in the rock from the very place where the ancient stonecutter left his rude and unfinished work." Allusion to these so called soapstone excavations and pottery is made in the second biennial report on the Geology of Alabama, by Professor Toumey, 1858, and also in the first report of the Progress of Geological Survey of Alabama, by Dr. E. Smith, 1874, pages, 86, 94, and 118. The rock from which this specimen has been quarried is rather a fibrous serpentine, intermixed partly with an asbestoid actinite than a soapstone. A stone chisel has, according to the statement of Dr. Johnston, been found in the soapstone quarries, and was undoubtedly an instrument used in cutting and dressing the vessels, and is of a porphyritic or dioritic rock foreign to the geological formation in that section.

I found a peculiar tablet of indurated ferruginous clay, the straight lines along the margin of which would lead one to think that it was used for a tally, worn around the neck suspended by a string. It was found in an old field on the western shore of Mobile Bay, near Magnolia race course. In this county two kinds of shell-banks or shell-mounds are met with.

The first are situated in the low marshes of the delta of Mobile River, first recognized as artificial accumulations of shells, and described as the gnathodon beds by Professor Toumey in his second biennial report on Geology of Alabama, 1858. He mentions the same at the time of his visit extending over several acres of ground, and some with an elevation of from 10 to 20 feet, presenting the shape of truncated cones, covered with a growth of native forest trees. These beds are almost entirely made of the shells of *Gnathodon cuneatus*, but in some quantities of stone of *Cyrena carolinensis* and the *Neritina reclivata* have served in a less degree to swell those accumulations; together with these, charcoal, ashes, and the bones of birds and animals are found. Relics of the handicraft of the builders of these shell-mounds are almost unknown. Professor Toumey speaks of an instrument cut from the shell of the *Pyrula ficus* which he found 10 feet below the surface, and of scarce fragments of pottery. These beds are, at this day, almost all levelled to the ground, and are rapidly disappearing, many having been appropriated as excellent sites for market gardens, and vast quantities of shells have been, and are still, removed for the construction of our shell-roads. The time is rapidly approaching when scarce any vestige will be left of them, and it is therefore most to be wished that the little of what yet remains should be closely investigated, and a minute account be put upon permanent record.

The other shell-banks are situated on the eastern and western shores of Mobile Bay, and along the coast of the Mississippi sound to the mouth of the Pascagoula. They are all above tide-water on dry land, contiguous to the extensive oyster beds in these waters, and composed exclusively of the oyster. The most interesting and the most extensive of these accumulations made by the ancient Ostreaphagi is found on the

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north side of the Bayou Cock d'Indes near its mouth, a few miles distant from Bayou La Batterie, in the extreme southern part of this county. But comparativeiy a small part of the large mound is left, and what remains serves as a beautiful site for a farm house, shaded by magnificent live oaks of the growth perhaps of scores of decades, offering under their shade, from an elevation of from 25 to 35 feet, a fine view of the surrounding country, and the island-studded waters of the Gulf. A quarter of a century ago these banks furnished this city for years with lime for building, and are still much used for the construction of roadbeds; having, however, passed of late years into the hands of farmers, the application of lime for agricultural purposes tends now, more than anything else, to their demolition and rapid disappearance. Considerable quantities of remains of the industries of these shell-bank builders have been found, mostly in the shape of ornamental pottery, as testified by a collection of these relics in the hands of Major Walthall. They consist of a pipe, bowls, handles of pots, mouthpieces of jars, representing heads of birds and animals, and human heads with a most characteristic and impressive cast of features, reminding me strongly of the faces of Mexican idols. Some of these are almost indentical with those mentioned by Mr. Putman, in his report on the Peabody Museum of Archæology and Ethnology, published in the June number of the American Naturalist, and figured under Nos. 7775–76, specimens representing female heads bearing the very same features and the same style of head-dress as No. 7778. They are all made of soft clay found on the bay shore, mixed with very small particles of burnt shell. What interested me mostly in looking over these remains is the occurrence of the same double concave, rounded, and polished disks, agreeing exactly with those of No. 7838 in the same paper.

I learn that near Mount Vernon Arsenal, 30 miles distant from this city, and about 3½ miles from the Alabama River, are ancient burial grounds, and that the exploration of the same has, from time to time, been attempted by different persons, I do not know with what result.

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## SILVER CROSSES FROM AN INDIAN GRAVE-MOUND AT COOSAWATTEE OLD TOWN, MURRAY COUNTY, GEORGIA.

By Charles C. Jones, Jr., LL.D., *Augusta, Ga.*

The two silver crosses, correct representations* of which are herewith presented, were taken, in November, 1832, from a grave-mound at Coosawattee Old Town, in Murray County, Georgia. Indian relics were found associated with them. We incline to the opinion that they may properly be referred to the expedition of Hernando de Soto.

If we interpret aright the wanderings of the Adelantado over the

*These drawings are half-size, and delineate both faces of each cross.

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territory embraced within the geographical limits of the modern State of Georgia, his command halted for a while at the precise spot where these objects were obtained; and thence, moving down the valley of the Oostanaula, reached Chiaha, the site of the present town of Rome, where De Soto tarried during the month of June, 1540, to recruit his men and animals.

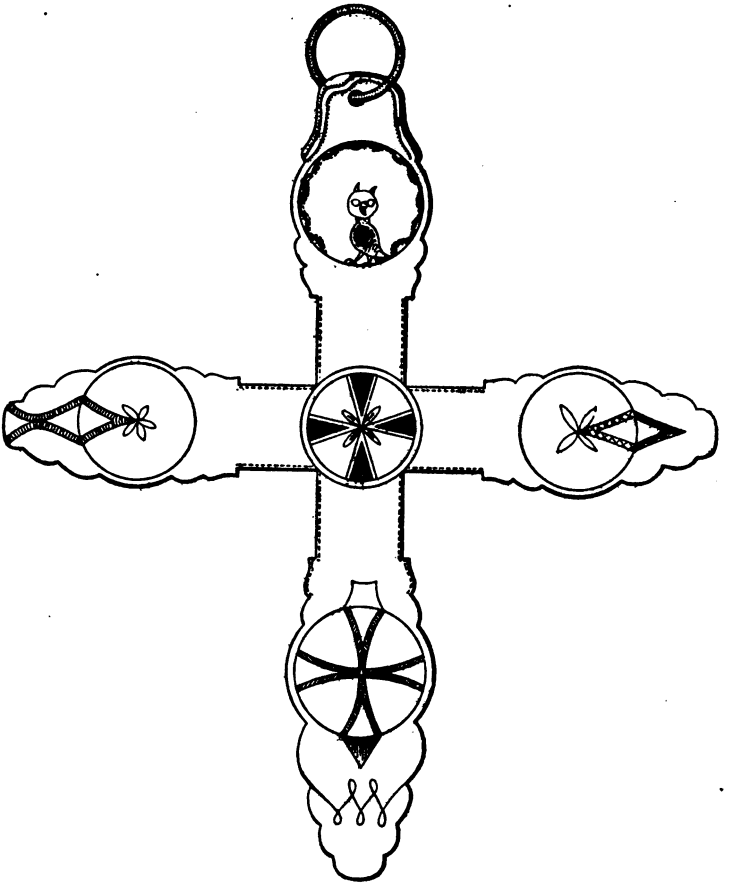

FIG. A 1.

In the Spanish narrative we are informed that before entering the village of Canasagua the strangers were met by twenty natives, each bearing a basket of mulberries.

Now, this name *Canasagua* lives to-day, and is borne by the *Connasagua River*, which, uniting with the Coosawattee, forms the Oostanaula. Coosawattee Old Town is located not far above the confluence of these streams. Within the historic period it continued to be a favorite abode of the Cherokee Indians.

In the neighboring county of Habersham, metallic objects of Euro-

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pean manufacture have been unearthed under such circumstances that we feel justified in attributing them to the companions either of De Soto or of Louis de Velasco.

It is a well-established fact that twelve priests, eight clergymen of inferior rank, and four monks accompanied the Adelantado's army. We are assured that the conversion of the natives was one of the avowed

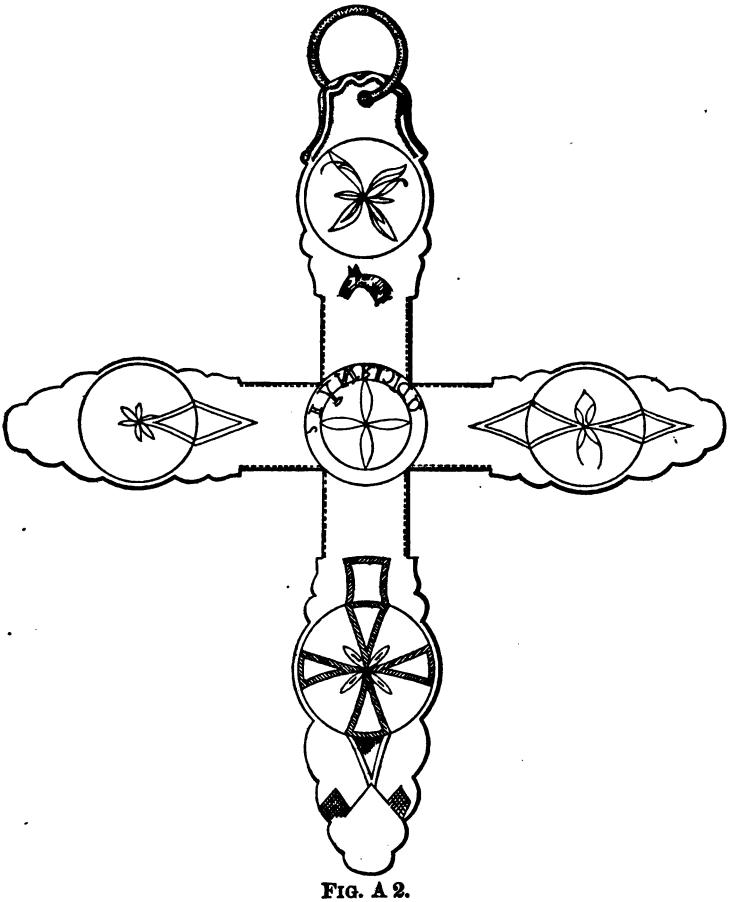

FIG. A 2.

purposes of the expedition. These clerical gentlemen were supplied with crucifixes, crosses, and rosaries, which they employed about, and distributed during the course of, their religious labors. That some effort was made to indoctrinate the aborigines in the mysteries of Christianity, and to lead them to look upon the cross as a symbol of peace, we are distinctly advised. Witness the erection of large wooden crosses, and the teachings of the priests at Achese, at Casqui, in the province of Icasqui, and elsewhere.

It appears by no means improbable that these crosses were presented

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by the Spanish clergymen of the expedition to prominent Indians—reckoned as converts at the time—and that their fellows, in obedience to a custom long established and maintained even to the present moment, upon the death of the fortunate owners, buried them in the grave-mounds erected for their sepulture.

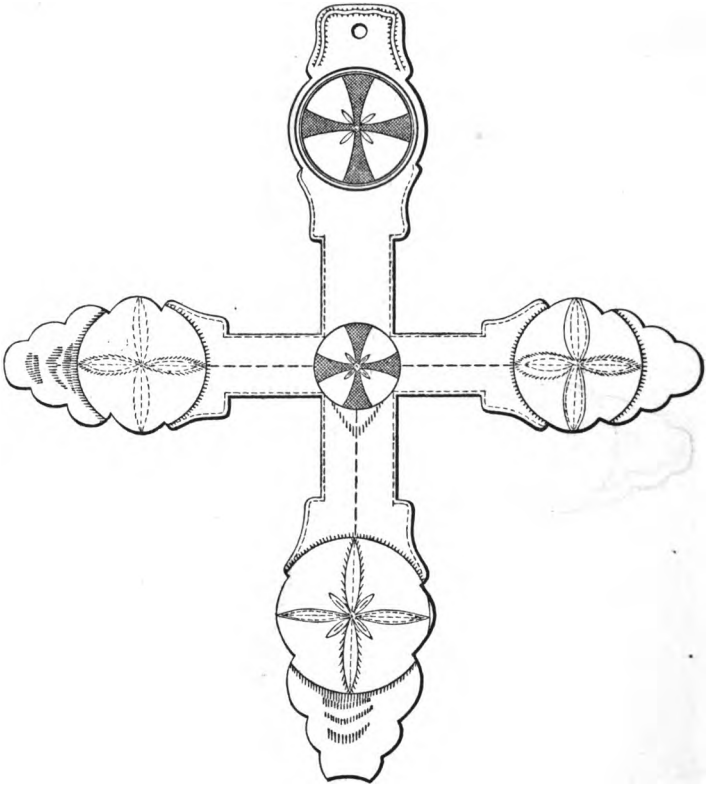

FIG. B 1.

We regret that we have no suitable references at hand which would enable us to determine, at least approximatively, the date of the manufacture of these crosses. The silver of which they are made is seemingly quite pure, and each cross is about the thirtieth of an inch in thickness.

Some intrusive engraving appears on the face of one of these objects. Behold the delineation of the head and neck of a *horse!* Even the most superficial examination will convince any one that this figure was not made with the graver's tool which wrought the other ornamentations, but that it was more rudely done, and, in all likelihood, with the sharp point of a flint flake.

Why an *owl* should have been figured on the other face of this cross, I know not. Were this a Roman relic our wonder would not be excited.

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We are at a loss to suggest a satisfactory interpretation of the inscription appearing in the center of one of the faces of the cross which still retains its ring for suspension. Can it be a rude tracing by the donor, on the spur of the moment, of the name of the Indian to whom the cross was presented? This inscription has an illiterate, unskillful, and hasty look about it. It is not a of a kind with the rest of the engraving, and was certainly added after the completion of the object. Writ-

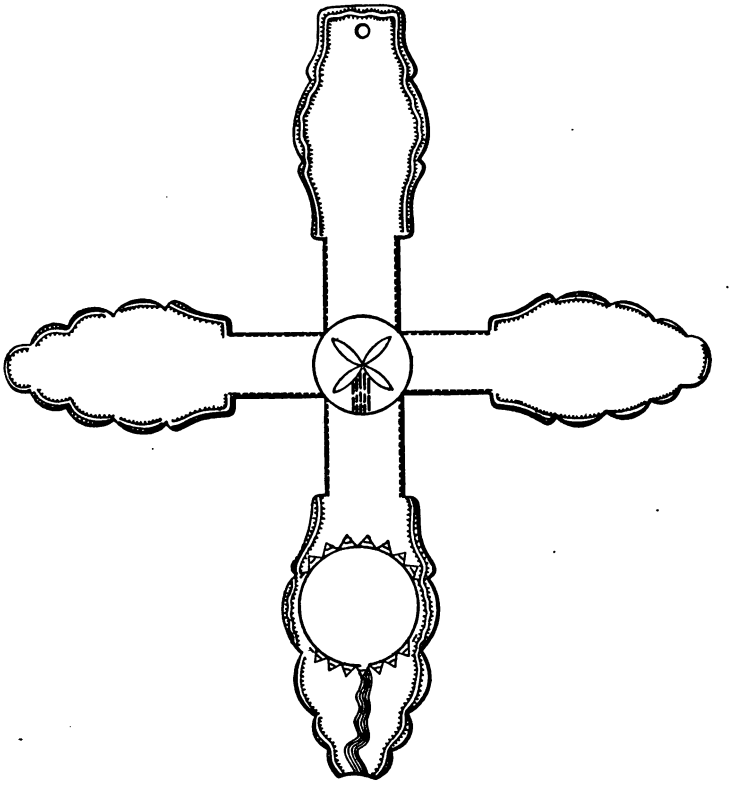

FIG. B 2.

ten from left to right, it runs as follows: IYNKICIDU. Read from right to left, we have UDICIKNYI. In either case, by a slight exercise of the imagination, we have a name with a traditional aboriginal ring about it. Manifestly these letters were not within the double circle when the cross passed from the shop of the silversmith, and we are persuaded that both a clumsy tool and an unskilled hand were employed in their superscription.

As we well know, the Florida tribes were wholly unacquainted with the *horse* prior to the advent of the European. To them, therefore, on its first appearance, this quadruped must have proved an object of special interest and wonder. These silver ornaments, too, were doubt-



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less held in high esteem, because, in beauty of material, symmetry of form, and excellency of manufacture, they far excelled all the products of aboriginal fabrication.

May we not suggest that the native, into whose ownership one of these crosses passed, endeavored with a flint flake to perpetuate his recollection of this animal which, in his esteem, was not less remarkable than the pale-faced stranger or his shining gift? We cannot resist the impression that this equinal delineation was the work of an Indian.

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## THE GREAT MOUND ON THE ETOWAH RIVER, GEORGIA.

By Charles Whittlesey, *of Cleveland, Ohio.*

Not having seen a detailed description of this mound, I made a visit to it in behalf of the Western Reserve Historical Society in May, 1871. It stands upon the north bank of the Etowah, about 2 miles below where it is crossed by the Chattanooga and Atlanta Railway, near Cartersville. Its form, size, and elevation are singular and imposing. It occupies the easterly point or angle of a large and luxuriant river bottom, a part of which is subject to inundations. The soil is a deep, rich, black loam, covering several hundred acres, which has been cultivated in corn and cotton since the Cherokees left it about forty years since.

I was compelled, by bad weather, to make the survey in haste. The bearings were taken with a prismatic compass, the distances measured

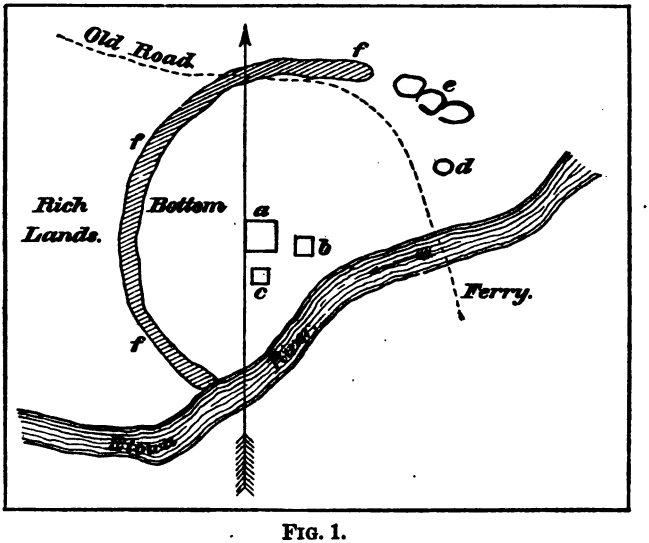


Fig. 1.

by pacing, and the elevations obtained with a pocket level. They are therefore subject to the corrections of future surveyors. Its base covers a space of about 3 acres, and stands at a level of 23 feet above low water in the river. In great floods the water approaches near the mound on

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the west, but has not been known to reach it. The body of the mound has an irregular figure, as shown in the plan. It is longest on the meridian, its diameter in that direction being about 270 feet. On the top is a nearly level area of about an acre, the average height of which is 50 feet above the base. A broad ramp or graded way (1) winds upward from the plain, around the south face of the mound, to the area on the top.

Like some of the pyramids of Egypt, it has two smaller ones as tenders: one on the south, *C;* another to the southeast, *B;* each about 100 feet distant, their bases nearly square, and of nearly equal dimensions. If they were not in the shadow of the great mound they would attract attention for their size and regularity. The ground at *B* is 3 feet higher than at *C.* All of them are truncated. The mound *C* is not a perfectly regular figure, but approaches a square, with one side broken into three lines. Its height above base is 18 feet. The bearing of its western side is north 10° west, and the length on the ground 47 paces, having been somewhat spread out by plowing around the foot. On the east is a

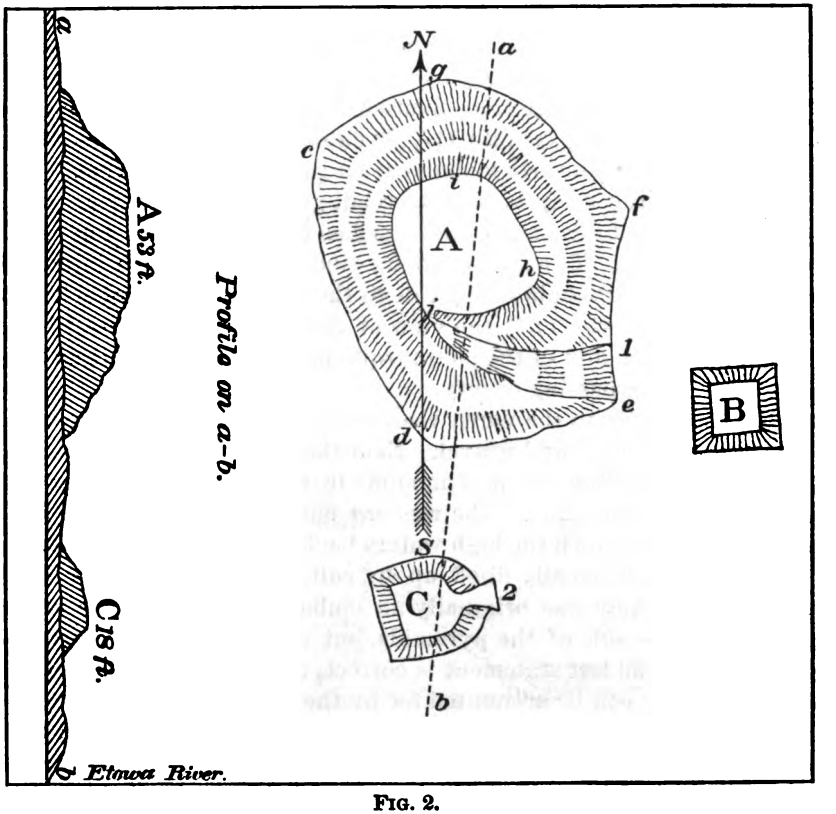


FIG. 2.

ramp, with a slope of one to two degrees which allows of ready ascent by persons on foot.

The slopes of all the mounds are very steep and quite perfect, in

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some places still standing at an angle of 45°. *B* is a regular truncated pyramid, with a square base about 106 feet on a side, two of the faces bearing 5° west of the meridian. Its elevation is 22 feet. There is no ramp, or place of ascent which is less steep than the general slopes.

Towards the southeast corner of the surface of *B* is a sunken place as though a vault had fallen in.

The proprietor has managed to cultivate the summits of all the mounds, regarding the group in the light of a continual injury by the loss of several acres of ground. Most of the material of the mounds is the rich black mold of the bottom land, with occasional lumps of red clay. The soil on their sides and summits produces corn, cotton, grass, vines, and bushes in full luxuriance. The perimeter of the base of the great mound is 534 paces. As the ground had been recently plowed and was soaked with a deluge of rain, a pace will represent little more than 2 feet. I give the circumference provisionally at 370 yards. The area on the top is like the base, oblong north and south, but its figure is more regular. Its perimeter is 231 paces.

From the center of the pyramid *C* a line on the magnetic meridian passes a few feet to the west of the center of the platform on the summit of *A*. Its sides are nowhere washed or gullied by rains. Prior to the clearing of the land, large trees flourished on the top and on the slopes. I estimate its mass to contain 117,000 cubic yards, which is about four-fifths of the Prussian earth monument on the field of Waterloo.

At the base the ramp is 50 feet broad, growing narrower as you ascend. It curves to the right, and reaches the area on the top near its southwest corner. Twenty-five years since, before it was injured by cultivation, visitors could easily ride to the summit on horseback along the ramp. From this spot the view of the rich valley of the Etowah, towards the west, and of the picturesque hills which border it on either side, is one of surpassing beauty.

About 300 yards to the north rises the second terrace of the valley, composed of red clay and gravel. Near the foot of it are the remains of a ditch, inclosing this group of mounds in an arc of a circle, at a distance of about 200 yards. The western end rests on the river below the mounds, into which the high waters back up a considerable distance.

It has been principally filled up by cultivation. The owner of the premises says there was originally an embankment along the edge of the ditch on the side of the pyramids, but other old settlers say there was none. If the last statement is correct, a part of the earth composing the mounds can be accounted for by the ditch.

Its length is about one-fourth of a mile, and it does not extend to the river above the mounds. Near the upper end are two oblong irregular pits, 12 to 15 feet deep, from which a part of the earth of the mounds may have been taken. The diameter of the pits varies from 150 to 200 feet, and the breadth from 60 to 70. The ditch is reputed to have been 30 feet wide and 10 feet deep. Two hundred yards to the northeast of

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*A* are the remains of four low mounds within the ditch, near the large pits. Five hundred yards to the northwest, on the edge of the second terrace, is a mound which is yet 8 feet high, although it has been industriously plowed over more than thirty years. On the opposite side of the river, one-fourth of a mile below, and on the same side 2 miles below, are said to be small mounds.

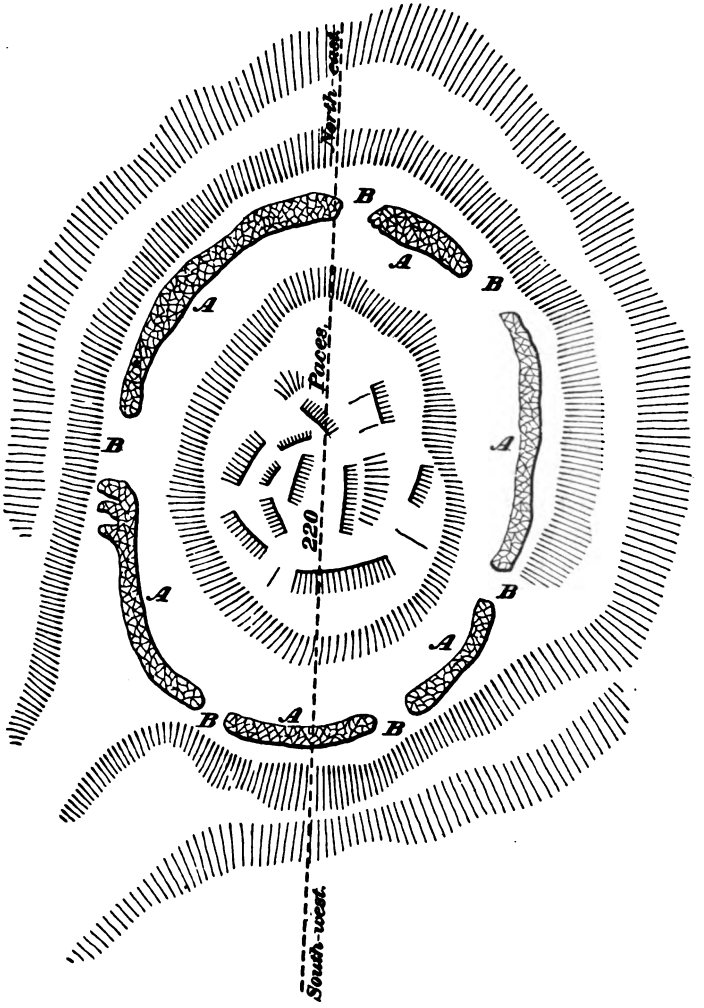


FIG. 3.

On the summit of a rocky hill, 2½ miles northwest, which overlooks the valley of the Etowah towards Rome, and also the hill country on the south, is an inclosure of loose unhewn stones, known as the "Indian Fort." It has now the appearance of a heavy stone fence which has fallen down. There are six openings or entrances, *B B B*, having a breadth of 10 to 60 feet, situated at irregular distances. It is an irregu-

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lar oval figure inclosing the rocky summit of the hill, the largest diameter of which is 220 paces and the shorter 200. The elevation of the knob, at the center, is 50 feet above the terrace or bench, on which the lines of loose stones are lying. This interior space is principally cleared of loose stone, and shows bare ledges of lime rock, in horizontal layers.

The hill is covered with an open growth of oaks. There is nothing in this structure suggestive of a fort, except its elevated position, which, however, is by no means inaccessible. The openings are too wide and too numerous to warrant the idea of a defensive work. It is more probable that it was the scene of imposing public processions and displays, and was approached by crowds of persons from all sides through the openings. The rude wall or line of stones would be the necessary result of clearing the ground of the blocks of limestone once scattered profusely over the surface.

Near where the railway from Cartersville to Cedarville crosses Petit's Creek, at the base of the limestone bluff, about half a mile east of the "fort," is an artificial pile of small stones, which was once about 18 feet in height. It is now very much injured by persons in search of treasure and of relics, who have formed a crater at the center nearly down to the ground, throwing the stones over the sides. It must have been a regular cone, with smaller heaps attached around its base, which was irregular, and about 160 feet in circumference. This mound of stones does not differ from those raised by the red men over the remains of their dead chiefs except in size.

A few days before I was at the great mound, a rude stone effigy of a female was plowed out near its base on the north side. It is quite grotesque, resembling the uncouth carvings in wood of the Indians of the north. Its height is 14 inches, its weight 36 pounds, and the material is the limestone of the region.

FIG. 4.

FIG. 5.

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I have a photograph of it, viewed on three sides. On the hips and back are colored zigzag lines of white and brown, intended for ornament. Some years since a male, probably the mate to it, was plowed out near the same place; also an earthen vase and other pottery, with flint disks. The first-found image was lost or destroyed, and the other soon will be. In style and artistic execution they appear to be the work of the present red man.

FIG. 6.

Mr. Tumlin, the owner of the premises, and Mr. Sage, of Cartersville, who knew the country while the Cherokees were in possession of it, state that the summit of the great pyramid was a fortified village, surrounded by pickets of wood and a slight embankment. This parapet is still visible, but is, at least in part, owing to furrows turned outward in plowing, and, until recently, the stumps of the pickets were struck by the plow. Near the southeast corner of the area, on the top, is a low mound. It is a third of a mile, at the nearest point, to where there is land of a height equal to the mound, and therefore it was a place easily defended. Although the Cherokees made use of it as a fort against the Creeks, they always denied having any knowledge of the race or the persons by whom the mound was erected. The gentlemen above named questioned them repeatedly on this point, and always received the same answer. If it had been designed as a place of defense originally, a much less broad and gentle road to the summit would have been made.

I was attracted to this mound and its surroundings as a type of the flat-top pyramids, so common on the waters of the Gulf of Mexico, which have been by some archæologists attributed to the present race of red men. In Florida and in Alabama, the early English and Spanish travelers found Indian caciques with their wigwams on the top of such mounds, around which were the villages of their tribe. Instances are given where Indian towns occupied spaces surrounded by ancient embankments of earth, both with and without mounds.

Mr. S. F. Haven, long distinguished in archæology as the secretary of the American Antiquarian Society at Worcester, Mass., in his article in the Smithsonian Contributions for 1855, vol. viii, has referred to an instance of an intrenched fort made by the Arickarees, in a bend of the Missouri River, above Council Bluffs. The description of this fort by Lewis and Clark does not give it the character of an earthwork with ditches for defense. It was a temporary breastwork of logs and earth and stone, hastily thrown up, such as are common in Indian warfare, and in all warfare.

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The Indian forts which were attacked by Champlain in northeastern New York in 1609 were constructed of pickets set in a low bank, strengthened by interlacing branches and poles, secured by bark and withes. During the French wars with the Iroquois, on the waters of Lake Ontario, they met with nothing more advanced than these light stockades. The pickets were set in the earth, and the bank raised against them from both sides, to give them a more firm support. In no case was the bank or ditch relied upon as a protection or as an obstacle to those without. They were of a profile too slight for this purpose.

The northwestern Indians have been questioned in numerous instances as to the authors of the earthworks of the West. They universally deny having any knowledge or tradition of the persons who built them; a tradition which could not have been lost, or the art of making them. The relics which are found in the mounds, in connection with the first or oldest burials, although there are resemblances, differ from the relics of the red men in many particulars. If stone axes or mauls of the Indian type have been found in the mounds, they are rare. The last-named race were not miners of copper or copper-workers. In the implements of the two races there are resemblances, especially in those which are made of flint, but no greater than in those of the ancient races in Europe, where no connection is claimed.

It cannot, however, be denied that continued investigations bring to light a strong similarity between the works of the ancient tribes of the South and the mound-builders. If the dividing line shall be broken down as to them, there is a wide difference between the northern tribes and the mound-builders.

Col. C. C. Jones, of Atlanta, Ga., in his valuable work on the Southern Indians (1874), has given historical proof to show that the Spaniards were witnesses to the erection of such mounds.

Most of the above descriptive matter is an abstract of my remarks at the Chicago meeting of the American Association, in August, 1871, before the appearance of the book of Colonel Jones. The drawings used at the meeting have been reduced by photograph for this paper. I take pleasure in referring to his work (pages 137 to 143) for details not in my description, especially the artificial ponds *D D*, and the mound *E* inclosed by the moat. The cavities *E E E* of my sketch are the ponds *P* of Colonel Jones, but at the time of my visit were without water. There is but one ascent to the platform *A*, which is represented at 1, e j, and is in very good condition. Fort Hill no doubt had a relation to this group of mounds answering to the high places of worship which are common in Palestine.

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## NEW RIVER MOUNDS, BERRIEN COUNTY, GEORGIA.

By William J. Taylor, *of Nashville, Ga.*

The mounds described in this paper, two in number, are situated on a dry sandy level of pine and oak land near the edge of a hummock which skirts the creek in the ninth district of Berrien County, Georgia. They are about 300 yards from the creek and 100 yards from a branch emptying into the creek. This site is on lot numbered 275, and 6 miles southwest from the town of Nashville.

The mounds had been partially explored previously to our examination, but the following is an account of our results:

Mound No. 1 was 30 feet wide and 4 feet high, and perfectly circular at the base. The earth composing it was obtained from a saucer-shaped excavation, now 8 feet across and 1 foot deep. At the bottom of this depression were found charred wood, ashes, and pieces of burnt pine wood, which appeared to have been placed there when the interment was made.

Mound No. 2 resembled No. 1 in every respect. The growth on both mounds were wire-grass, sedge, bushes of the red oak and post oak. The early settlers and the Indians whom they encountered were alike ignorant of the origin of these relics of the past.

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## ANCIENT CANALS IN FLORIDA.

By Charles J. Kenworthy, *of Jacksonville, Fla.*

In November and December, 1877, I indulged in a sail-boat cruise from Key West to Cedar Keys, and *en route* found and superficially examined an ancient canal in township 50 south, range 25 east. The accompanying drawing gives a sketch of the locality.

The canal is at present 12 feet wide at the bottom, and about 40 at the top. The embankment on each side is about 4 feet higher than the original surface. Engineering skill was manifested in laying out the canal, for its first 600 feet are at right angles with the coast line, after which it trends to the eastward. Those canals were not erected by our indolent Indians, and in my opinion they were made by another race. Three years ago I made a boat trip from Cedar Keys to Charlotte Harbor, on Lake Okeechobee. On my return I superficially examined a canal at Pine Island, Charlotte Harbor.

Some of the largest mounds in the State have been constructed near the southwest end of the canal. In my opinion the mounds have been made since the canal was excavated. I was anxious to make an examination to determine the date of the mound-building as regards the canal,

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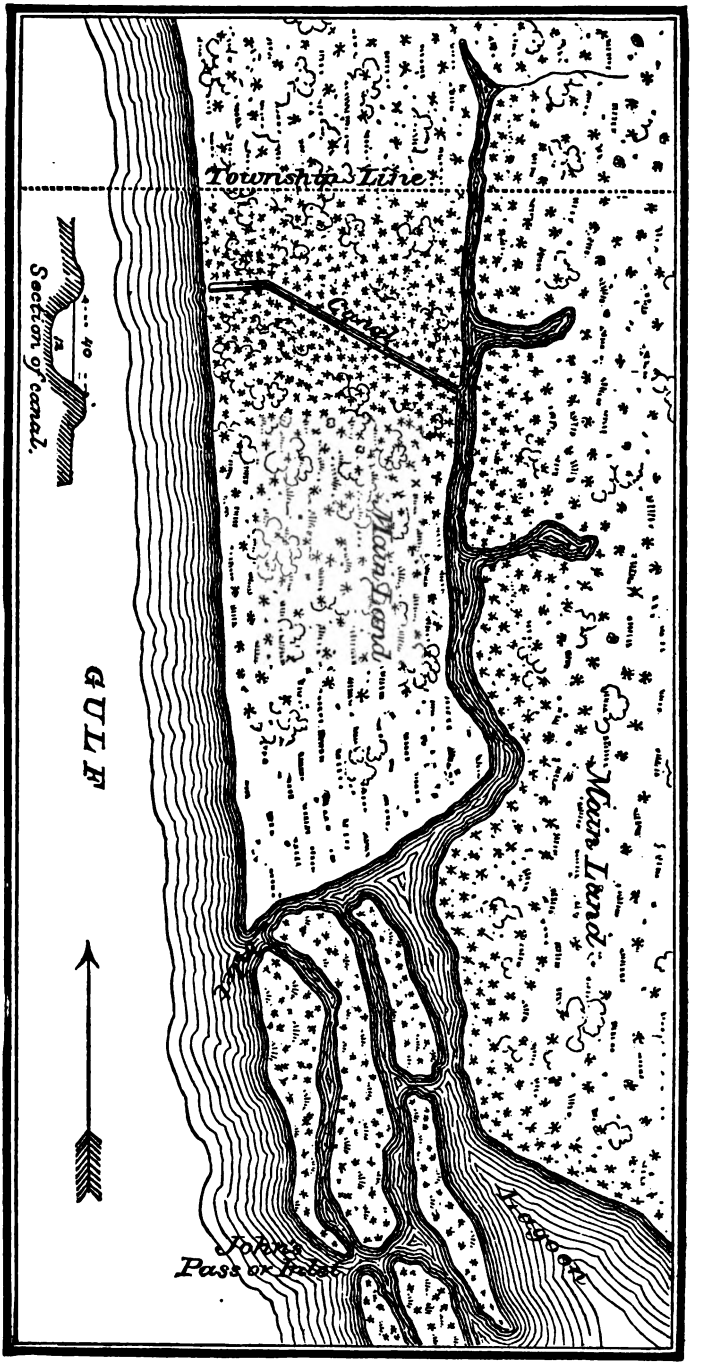


PLAN No. 1.

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but my companions would not stop. I was assured, by a gentleman who had resided on the island for 24 years, that the canal extended across the island a distance of 3 miles, and that it could be traced inland (from the shore of the mainland) a distance of 14 miles. A canal similar in character exists between the falls at the head of the Caloosahatchee and Lake Okeechobee. An old coaster informed me that he had discerned an ancient canal on one of the Thousand Islands south of Cape Romano. Those excavations are evidently very old and not the work of Indians. They were not constructed for defensive purposes, but evidently for canals.

In his examinations, Professor Wyman did not visit the large mounds of the State. The largest of those standing are to be found on Pine Island and Gasparilla Island, Charlotte Harbor, at Old Fort Centre, Fish Eating Creek, on the plain between New Fort Centre and Fort Thompson, and between Fort Myers and Cyprus Bay. The mound at Old Fort Centre is about 50 feet high. It was evidently used for burial purposes, and if an excavation was made many things might be collected. I used a stick, and with a few minutes' scratching I found bones everywhere. The largest and most interesting mounds in the State have escaped notice and examination. From the immense number and large size of the shell heaps on the southwest coast, this section must have been inhabited for a long period by a large population. The distribution of the shells in some of the heaps led me to believe that the inhabitants were governed by some law. In some of the heaps you will find a layer of conch shells several feet in thickness, and above or below a layer of oyster shells. The largest number of shell mounds are to be found on the Nelt River, a lagoon or river connecting Crystal and Henoosana Rivers.

In my wanderings I found a remarkable shell deposit on the shore of Orange Lake. I noticed an elevation on the flat near the shore of the lake, covering over an acre and about 6 feet high. I noticed on the surface fragments of oyster shells. I obtained a grubbing hoe and made an excavation about 2 feet deep, and found a bed of oyster shells. They differed from other shells I have examined in other portions of the State. As far as examined, each shell had been broken at the end, as oysters were opened some years ago. The present elevation of Orange Lake is 48 feet 8 inches above the ocean level. The nearest oyster bed is distant 43 miles. This immense heap of shells was not transported 43 miles, but in my opinion were obtained from Orange Lake when it was a bay or estuary of the sea. From my investigations I feel assured that the oysters were collected and eaten when the State of Florida consisted of a belt of high land extending from the Chattahoochee to a point south of Sumterville, and before the balance of the State attained its present elevation above the ocean. If my views are correct, Florida was inhabited a long time ago. If the shells referred to have not presented the endeavors of man's work I might have referred the

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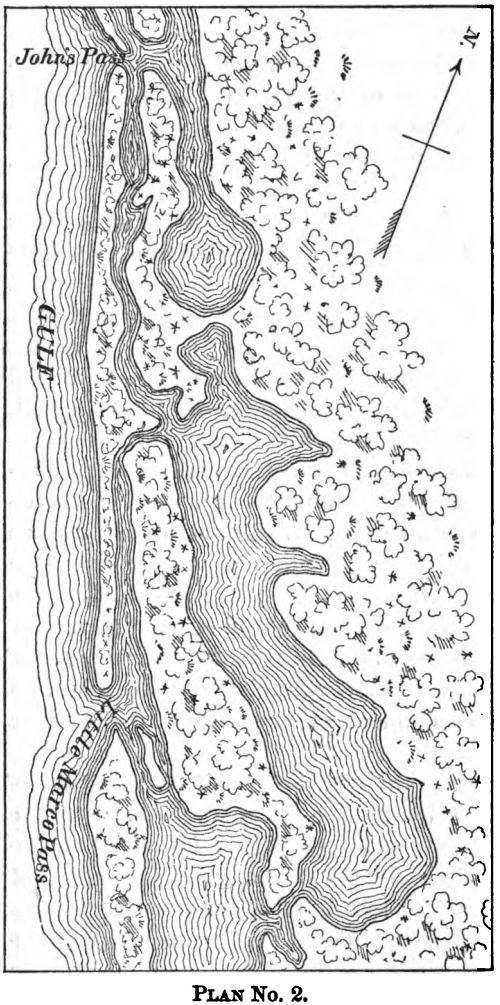
collection to other causes. Two years ago I made the acquaintance of a very intelligent gentleman residing near Sumterville. Four years ago he was out deer hunting with dogs on the shore of Lake Charleossoskie. He was riding over an elevated hummock surrounded by a large sun-grass swamp, and discovered traces of old cultivation. Looking about, he discovered a heap of ancient pottery, which, he assured me, amounted to several cart-loads. He dismounted and examined a number of the vessels, and found that a hole had been made in the bottom of each to render it useless. After examining a few of them he followed in pursuit of his dogs. It seems to me that this hummock must have been the resort of a tribe of Indians, and when attacked by enemies they rendered their most valuable utensils useless to the enemy.




PLAN No. 2.

He had in the city, some months since, a large molar tooth weighing 9 pounds. It was picked up near Sumterville. On some of the tributaries of Pease Creek huge bones are visible in the sand bars at low stages of water.

Plan No. 1 is an accurate sketch of the locality, showing the peninsula, inlet, lagoon, islands, and canals. Plan No. 2, on a smaller scale, shows John's Pass and Marco Inlet.

One mile and three-quarters south of Doctor's Pass is John's Pass, with three inside channels connecting them. Three miles and a quarter south of John's Pass is Little Marco Inlet, with an inside channel connecting them.

The land on the peninsula traversed by the canal is low, and poor pine land, not over 4 feet above high-water mark. From a passing examination of the mainland east of the lagoon it presented the appearance of low pine land unfit for cultivation. It is evident that no

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large settlement ever existed in the neighborhood of the canal. Unless marked changes have occurred in the land by the opening of passes since the excavation was made, there is no apparent reason why so much labor was bestowed on the work.

Along the Gulf shore, for a distance of 150 feet inland from high-water mark, there exists a flat sand bank about 4 feet above the general surface of the peninsula, and this deposit has apparently blocked up the Gulf end of the canal. The canal at the head of the Caloosahatchee connects with the river and ends abruptly inland.

The canal crossing Pine Island is less than 4 miles from its northern end, and there is no apparent object why the excavation was made. The width, depth, and general appearance of all the canals are the same.

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## MOUNDS IN ALACHUA COUNTY, FLORIDA.

By James Bell, *of Gainesville, Fla.*

There are at least fifty mounds within 20 miles of Gainesville, Florida. The accompanying sketch gives the location of six which have been examined, and of which the descriptions are given in this paper.

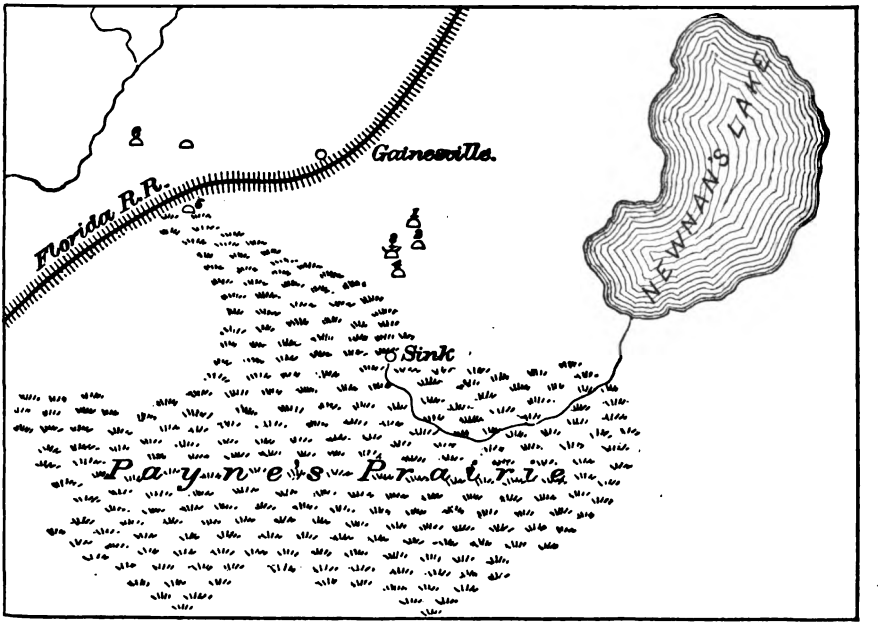


Fig. 1.

Mound No. 1 was 7 feet high and 30 feet in diameter, and located in a cleared field which has been plowed over for the last twenty years.

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A shaft was sunk below the original surface. Openings were also made in the sides. But no relics whatever were found.

Mound No. 2 is situated in the same field 300 yards north of No. 1. It was at the time of its examination 10 feet high and about 95 feet in base diameter. Like No. 1, it had been much plowed over. A shaft was sunk in it below the base and extended laterally, but nothing was found excepting a few fragments of charcoal and pottery.

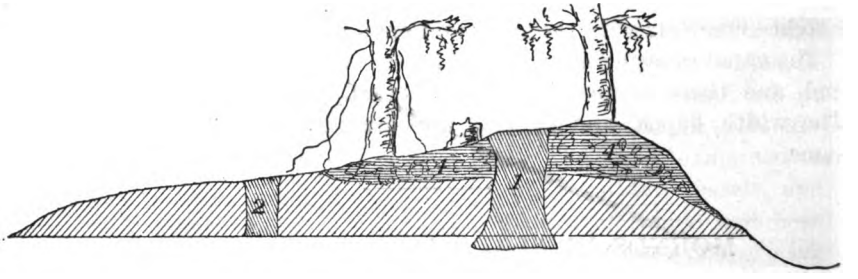


FIG. 2.—Mound No. 3—looking north (1 and 2=shafts: 4, 4=pottery.

Mound No. 3 is upon a hummock near its edge. It measures 12 feet in height, and 105 by 70 feet in base diameter. Being situated on the slope of the hummock, the summit of which overlooks the mound, this work seems to have escaped observation. A family living only 30 yards distant were very much surprised to find it a burial mound. Two large trees were growing on the top at the time of my visit, and the entire surface was covered with a dense growth of bushes and grape-vines. The accompanying sketch will convey a clear idea of its appearance. A shaft 6 feet in diameter was sunk to the original surface. After digging down about 10 inches broken pottery was encountered in great quantities, but so much shattered that it was impossible to restore a single vessel.

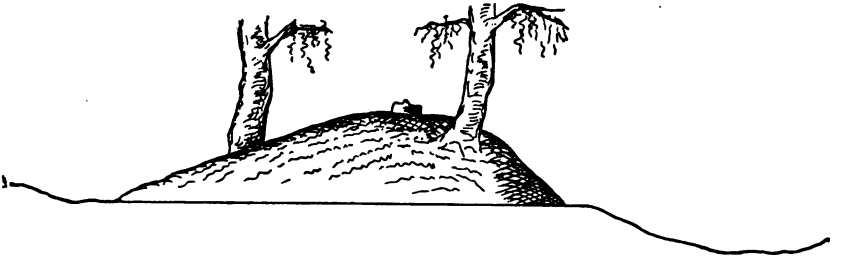

FIG. 3.—Mound No. 3—looking west.

The first bones were found about 15 or 18 inches from the surface. This stratum extended over the mound for a space 30 feet in diameter. There appeared to be three tiers of bones about a foot apart. The bodies had not been buried here; the bones seemed to have been thrown in promiscuously.

Being compelled to abandon my work for a season, other persons dug

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into this mound and recovered some valuable pottery. One large basin was made in imitation of a duck with wings and bill exposed.

Resuming the exploration, the surface was dug over for a space of 30 feet in diameter and 5 feet deep. Within that area not less than one thousand skeletons were exhumed and at least two wagon loads of potsherds. This pottery commenced about a foot from the surface and extended down to the first stratum of bones.

Mound No. 4 was only 4 feet high and 15 feet in base diameter. Upon examination it was found to contain no relics.

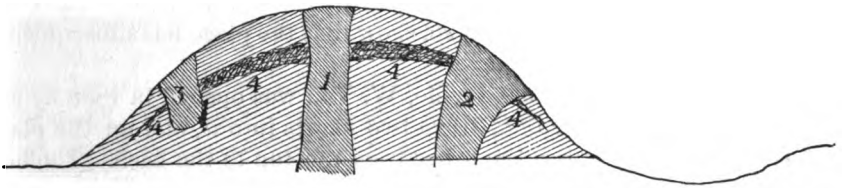


FIG. 4.—Mound No. 5—looking north (1, 2, 3=shafts: 4, 4, 4=charcoal and ashes.)

Mound No. 5 was 10 feet high and 32 feet in base diameter, and very symmetrically shaped. It was situated on a hummock about 50 yards from the margin of the arm of Payne's Prairie. This was formerly a lake, but about twenty years ago the water disappeared through the sink. It remained dry for about three years, when it filled with water and has remained a lake ever since. This mound was examined (see Fig. 4) and a stratum of ashes, charcoal, and charred bones encountered 3 feet from the surface.

Mound No. 6 was about 8 feet high and 80 feet in base diameter. It stood in a cleared field which had been plowed over for a number of years. Nothing was discovered within it, although a ditch was cut through from one side to the other.

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## SHELL DEPOSITS AT THE MOUTH OF SHORT CREEK, WEST VIRGINIA.

BY H. B. HUBBARD, *of Wheeling, W. Va.*

Short Creek is a little stream that enters the Ohio River 9 miles above the city of Wheeling, and the shell deposit alluded to commences to show in the bank of the river some 50 yards above the mouth of this creek, and is exposed for over 100 feet up the river, when it is hidden by a fill for a road down to the water. The shells are those of the freshwater clam and are very fragile, splitting into fine scales on handling, though an occasional one is found that is perfect. The shells are now covered with about 3 feet of silt, and formerly there were 3 or 4 feet of the same loamy deposit over this, but it was removed in grading for a public road. A portion of this road, with much of the deposit of shells, has fallen into the river by the caving in of the bank.

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While many of the usual indications which mark such deposits as artificial, such as the remains of fires, &c., are present, there are two peculiarities worthy of especial notice. One of which is a stratum of river bowlders which divides the deposit of shells, which is over 2 feet in thickness, into two very equal parts through its entire exposure. These bowlders were evidently selected with great care for uniformity in size and are about 3 inches in diameter, and are packed as closely as in a pavement. The remains of the fires show both above and below these bowlders, but none immediately upon them. The other peculiarity is the abundance of human bones found mixed with the shells, but these are probably of later origin, and, if so, show that the place has subsequently been used for a burial place.

The large mound at Moundsville, W. Va., was opened in 1838 by Mr. Tomlinson, who, in opening, drove two shafts into it, one on the plane of the base to its center, the other from the top to the base. The horizontal shaft was through a loamy clay as far as driven, which was some 12 or 15 feet at the time I was there, and for 3 or 4 feet in from the surface on the sides and top was marked with fine dark lines which formed segments of circles springing from each other in successive rows, after the manner of what is sometimes termed the "shell-pattern." These lines were from 12 to 16 inches from point to point of contact and 2½ to 3 inches apart at their greatest vertical separation. These lines suggested the idea that the mounds had been faced with turf. In support of this hypothesis, it would be necessary to remember the high angle of elevation of the faces of the mound, the height of the mound and the material of which it is composed, and while the angle of inclination of the faces is no more than nature willingly tolerates under such circumstances, yet, unless the faces were protected, they would be much wasted and gullied by the rains before they would be protected by spontaneous vegetation. The adaptation of the means to the end is apparent in the facility with which the material could be obtained and applied, and in the perfect protection which such a casing would afford.

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## ANTIQUITIES OF SOUTHWESTERN PENNSYLVANIA.

By Rev. Horace Hayden, *of West Brownsville, Pa.*

In view of the fact that in the States of Ohio, Indiana, and especially Wisconsin, ancient remains have been so carefully investigated, it must appear strange that the many *indicia* of a prehistoric race in the western part of Pennsylvania and in the State of West Virginia should be so little known. At the present date these *indicia* have been largely decreased by vandalism and by the action of the elements. Many mounds have been plowed down to the surface of the surrounding ground or leveled to make way for towns. Many of the remark-

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able sculptured rocks have been used for building purposes or are lying below the surface of the Monongahela River, even at low tide, the river being higher now at all seasons by reason of the slack-water improvements than it was forty years ago. The second geological report of Pennsylvania contains nothing on the subject of antiquities; Dr. Creigh, in his "History of Washington County," is entirely silent as to the numerous mounds, &c., which are found in the county limits; and the centennial volume of the "Resources of West Virginia," by Prof. M. F. Maury, ignores the many and exceedingly interesting remains in that State. I shall here, however, give simply an account of the antiquities of Fayette County, Pennsylvania, and, in another paper, of those in parts of West Virginia. This account will necessarily be taken largely from an unpublished work by Hon. James Veech and Freeman Lewis, the latter an old and experienced surveyor of Brownsville, Pa. Remains of embankments or "old forts" are numerous in Fayette County. The Indians known to us could give no satisfactory account of them. While the trees of the surrounding forests were chiefly oak, the growth upon and in the old forts was generally of large black walnut, wild cherry, and locust. Some indicate an age of three hundred to five hundred years, and some stood around the decayed remains of others. Judge Veech thinks they were originally composed of wood, as their *débris* is generally a vegetable mold, no stone being used in their construction. Old pottery, made of clay and mussel-shells, is always found among these ruins. The old forts were of various forms, square, oblong, triangular, circular, and semi-circular. Their sites were generally well chosen in reference to defense and observation, and, what is a singular fact, they were very often, generally in Fayette County, located on the highest and richest hills, and at a distance from any spring or stream of water.

One of these "old forts" was on the land of William Goe, near the Monongahela River, and just above the mouth of Little Redstone, where afterwards was a settlers' fort, called Cassell's or Castle Fort.

Another was situated at the mouth of Speers Run, where now stands the town of Belle Vernon. Two or three are found on a high ridge southwardly of Perryopolis, on the State road, and on land lately owned by John F. Martin.

Another noted one is on the west bank of the Youghiogheny River, nearly opposite the Brood ford, on land lately owned by James Collins. There are several on the high ridge of land leading from the Collins fort southwestwardly towards Plumsock, on lands of James Paull, John M. Austin, John Bute, and others, a remarkable one being on land lately owned by James Gilchrist and the Byers, where some very large human bones have been found.

There is one on the north side of Mountz Creek, above Irishman's Run. A very large one, containing 6 or 8 acres, is on the summit of Laurel Hill, where the mud pike crosses it, covered with a large growth of black walnut.



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One especially noted as containing a great quantity of broken shells and pottery existed on the high land between Laurel run and the Youghiogheny River, on a tract formerly owned by Judge Young, and remains of the fort are to be seen. There are yet distinct traces of one on land of General Henry W. Beeson, formerly Colonel McClean's, about miles east of Uniontown.

There was one northeast of New Geneva, at the locality known as the "Flint Hill," on land now owned by John Franks.

Two miles northeast of New Geneva, on the road to Uniontown, and on land late of William Morris, now Nicholas B. Johnson, was one celebrated for its great abundance of mussel-shells. In the high ridge southwardly of the headwaters of Middle Run several existed, of which may be named one on the Bixler land, one on the high knob eastwardly of Clark Breading's, one on the Alexander Wilson tract, and one on the land of Dennis Riley, deceased, formerly Andrew C. Johnson's. Judge Veech also states that "a very noted 'old fort' and of most commanding location was at Brownsville, on the site of Fort Burd, but covering a much larger area. Even after Colonel Burd built his fort here, in 1759, it retained the name of the 'Old Fort,' *Redstone Old Fort, or Fort Redstone.*" I am quite sure that Judge Veech is in error in locating this old fort on the site of Fort Burd.

Of the antiquities immediately around Brownsville no trace at present remains. On the original draught of Fort Burd, made by Major Joseph Shippen in 1759, and now in the possession of the Historical Society of Pennsylvania, can be seen, immediately to the rear of Fort Burd, the old Indian Fort, which is now so entirely obliterated that very few remember where it was located. The fullest description of this earthwork is found in "Travels in America, performed in 1806, for the purpose of exploring the rivers Allegheny, Monongahela, Ohio, and Mississippi, &c., by Thomas Ashe, esq., London, 1808." In the fifth letter of this work the author says:

"The neighborhood of Brownsville or Redstone abounds with monuments of Indian antiquity. They consist of fortified camps, barrows for the dead, images and utensils, military appointments, &c. A fortified camp (which is a fortification of a very complete nature, on whose ramparts timbers of 5 feet in diameter now grows) commands the town of Brownsville, which undoubtedly was once an Indian settlement. This camp contains about 13 acres, inclosed in a circle, the elevation of which is 7 feet above the adjoining ground. Within the circle a pentagon is accurately described, having its sides 4 feet high and its angles uniformly 3 feet from the circumference of the circle, thus leaving an unbroken communication all round. Each side of the pentagon has a postern opening into the passage between it and the circle, but the circle itself has only one grand gateway, which directly faces the town. Exactly in the center stands a mound, about 30 feet high, hitherto considered as a repository for the dead, and which any correct observer can perceive to have been a lookout. I confess that I examined

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these remains of the former power of man with much care and veneration; nor could I resist reproaching those writers who have ignorantly asserted, 'We know of no such thing existing as an Indian monument of respectability, for we would not honor with that name arrow-points, stone hatchets, stone pipes, half-shapen images, &c.'

"The one which I have opened might have been originally a parallelogram 60 feet by 20, and 30 feet high, whose upper surface and angles have been rounded by the long influence of time and accident; for we are not to conceive that the form of ancient works is exactly similar to that which they first possessed. Such, indeed, as are built of stone and have not been exposed to dilapidation do not experience any material change; but all those monuments (and they are by far the most numerous) which are composed of earth must have undergone considerable alteration and waste, and therefore afford a very scanty evidence of their original dimensions, or (except where bones are found) of their purpose. The bones in the barrows of this neighborhood were directed to every point, without regard to system or order. This surprised me more as I am well convinced that in general most of the ancient aboriginal nations and tribes had favorite positions for their dead, and even favorite strata with which to cover them, as I shall have occasion to explain when on the spot where the primitive Indians resided. Perhaps the irregularities in the barrows of this place may arise from the bones deposited in them, having been those of persons killed in battle, and collected by the survivors in order to be buried under one great mound. - - - At the same time and place I found in my researches a few carved stone pipes and hatchets, flints for arrows, and pieces of earthenware. I cannot take upon me to say that the workmanship of any of these articles surpasses the efforts of some of the present race of Indians, but it certainly destroys an opinion which prevailed, that the inhabitants in the most remote times had the use of arms, utensils and instruments made of copper, iron, and steel."

Josiah Priest, in his American Antiquities, 1833, p. 85, mentions this ancient fort, but he uses the language of Ashe without giving credit. Mr. James L. Bowman, who had frequently seen the outlines of the camp, notices it briefly in "Day's Historical Collections" and the "American Pioneer."

Curiously carved rocks are to be seen on many parts of the Monongahela River. At the mouth of Ten-Mile Creek, 12 miles above Brownsville, are the most interesting of these. Some of the rocks there bear the impress of a man's foot, a horse's foot, a hand, a head, a turkey, a fish, birds, beasts, &c.

On the farm of Mr. George. E. Hogg, near Dunlap's Creek Church, 5 miles east of Brownsville, there have been found a vast number of flat stones, soft and friable, which are full of small circular indentations of various diameters, as if made by the attrition of some harder substance, rubbed between the hands. Possibly they were used to produce fire by rubbing pieces of cane in them rapidly between the palms of the hand.

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## ROCK-CARVINGS ON THE SUSQUEHANNA RIVER.

By F. G. Galbraith, *of Bainbridge, Pa.*

The rock referred to in this paper was originally 71 feet in length and 10 feet in width. Seventeen feet on the west and 16 on the east remain undisturbed. The center, 38 feet in length, was blasted away many years ago, and the stone used in the construction of a shad-fishery, by which many carvings were undoubtedly destroyed, traces of which I discovered upon fragments of rock lying scattered over the upper end of the island. The rock was evidently a continued mass of sculpturing, and hundreds of these may yet be traced with a little care. A large portion of the east end is becoming detached from the main body, and will in the course of a few years topple over, face foremost, into the river. Many of the carvings, which are undoubtedly of a very remote date, are much defaced by the elements. This statement relates more particularly to those on the north and east ends, which I impute to the changing in the course of the stream at this particular point. The rock being located at the head of Grey Rock Falls, is subject to much wear by swift water. For this reason, and the fact that the rock is composed of talcose slate, it is my impression that the carvings were originally deeply cut, which evidence can again be traced in the east and south end carvings, all of which are much deeper than those on any other portion of the rock. The large circular carving is the only one traceable by compass on the rocks, and faces "nine o'clock, sunrise." The tracings were all taken by actual measurements from deadlines made upon the rock, one perpendicular through the center of the carving and another across. The one from which the tracings were made is slightly enlarged to show it more plainly. The small island (a fishery) which it connects is probably 80 feet long by 20 broad at its widest point. The large rock on the opposite side of the middle channel is about 150 yards distant, having several carvings upon it. I am unable to say whether the spring and fall floods rise sufficiently high to cover the large projecting rocks below the small island so as to change the course of the stream at that point, but do not think so, as the fall of water is about 8 feet to the mile. Mr. French informed me, however, that the rock and island were accessible in very dry seasons, so that it does not appear necessary that boats should have been brought into requisition by the natives, or if so, only in case of high water, while at work upon the rock. The outer rock can only be reached by boat.

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## CHAUTAUQUA COUNTY, NEW YORK.

By James Sheward, *of Dunkirk, N. Y.*

Chautauqua County has furnished many indications of a former occupancy; but, as yet, we have found nothing to establish its probable antiquity.

I have some fragments of a piece of pottery, a jar or vase, found beneath the roots of a very old apple-tree in the town of Stockton. This tree grew in a valley, and was evidently quite old when it was blown down. The vase or jar was broken, but it was estimated, from the pieces found, to be about two gallons capacity. The pieces indicate that it was made principally from pounded quartz. The surface was smooth and impervious to water. The depth at which it was found I have been unable to ascertain with any certainty. Thus far I can find no evidence of a secular increase in the valley; consequently there are no data for a calculation of the period when the jar was abandoned. The fragments and description were given to me by Mr. F. McCullough, of Delanti, this county. Within the village of Frewsbury, town of Carroll, some years ago, a pine stump, which had been left standing for a long time, was pulled up, and under its roots were found two human skeletons. I saw some of the bones were parts of the skull, but was unable to determine whether the crania indicated round, flat, or oval-shaped heads. I could obtain no certain information as to the depth below the surface at which these bones were found, and none as to secular increase. The pine stump was very large and showed 580 cuticle layers or growths. The tree at the time it was felled was five hundred and eighty years old, and was probably cut down twenty years or more before the stump was pulled up. A period of six hundred years must have elapsed since that tree began to grow. How long those skeletons have been inhumed prior to the germination of the tree we cannot tell. At the first settlement of that section of our county the valley was a vast pine forest. Through this valley runs a creek or brook, tributary to the Conawauga, one of the tributaries of the Ohio. I have reason to think that a thorough exploration of this neighborhood would give valuable information.

In the town of Sheridan, on the farm of Mr. N. Gould, have been found, at various times, numbers of human bones. These bones indicated, by their number, size, and position, that the place where they were found was either a cemetery or had been the scene of a battle where large numbers of all ages and sexes had been killed. The craniological developments I know nothing about. In the vicinity of Mr. Gould's farm are yet to be found earthen fortifications, breastworks, and ditches. These fortifications are somewhat numerous and exten-

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sive, reaching over into the town of Perufret, where a hill, known now as Fort Hill, gives unequivocal testimony of the work of man. Between Fort Hill and Mr. Gould's farm is found a hill about 30 feet high, with a circumference at its base of about 90 paces. The top of this hill is flat, oval in outline, and composed, as far as examined, of the material constituting the surface formation of the plain. The hill may possibly have been formed by currents of water, but there is no bluff or bank near it. It stands about 3 miles inland from the lake, and was originally covered with large forest trees in nowise differing from the trees of the surrounding plain. Mr. Gould, over seventy years of age, says he well remembers the hill as it was in his childhood, and that it was so conspicuously above the surrounding trees as to be regarded as a landmark by early navigators of Lake Erie. He describes one tree, which grew near the top of the hill, as being 4 feet in diameter. Careful examination of the plain gave no depression in the surface to indicate that the earth which composes the hill was excavated there. I am inclined to the opinion that the hill is in reality a mound, and that it was in some way connected with the other fortifications already mentioned. In this connection I may mention that some years ago, in plowing a field on his farm, Mr. Williams, of the town of Sheridan, turned up as much as two bushels of flint spalls or chips, and a number of arrow and spear heads. These were pretty much all together, and led Mr. Williams to suppose that Indians made their tools there. Some of these implements, in outline and material, very nearly, if not entirely, correspond to those found in Ohio, near what is called Flint Ridge. I believe that flint or chert is not to be found in this county. Whether the crude stone was brought to the place where the flints were found, and was there worked into shape, cannot be settled as yet. Some fifty-odd years ago I saw a large field in what is now the city of Zanesville, Ohio, plowed up for the first time. The whole field was dotted over with flakes, spalls, arrow and spear heads, stone hammers, and axes, indicative of a manufactory. Old and partly decayed stumps were overturned or pulled up and the spalls were found under them. From this field to Flint Ridge there was nearly a continuous water communication. There are grounds for believing that the material was originally quarried at Flint Ridge, where numerous excavations, partially filled up, are to be found, and having trees growing in them. Whether the persons or people who wrought in Sheridan were located there we do not know, neither can we safely say that the implements found were made by those who erected the fortifications.

I have an amulet which was plowed up on the farm of Mr. Prendergast, in the town of Westfield, this county, and by him presented to me. It somewhat resembles Fig. 27 in Colonel Foster's work, "Prehistoric Races," page 222, which he calls a *totem*. His totem was found in Wisconsin; the amulet was found in Chautauqua County. I will give my reasons for regarding these effigies as amulets in an article now pre-

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paring, entitled "An Inquiry into the Origin and Antiquity of the Indian Race." I have never yet found an Indian drawing or signature of his totem that could be at all compared to the outline of the amulet; and as there are two holes neatly drilled and rimmed for the reception of a thong or cord, I am inclined to think that no *Indian* made it, and that it belonged to a people of superior taste and skill. He who made and polished it was an expert workman, and could not have been a hunter or a warrior of the Indian kind. I have a stone gouge of admirable construction, which was plowed up in the town of Sheridan and given to me by Mr. Griswold. Like the amulet, it must have been made by an expert. The stone is hard enough to carry quite a fine edge, and the tool gives evidence of having been much used on wood. It is supposed that it was used for tapping the maple tree. I have some other implements found in this county, one in the shape of a celt, which, a Seneca Indian told me, was used by his people for skinning animals.

Chautauqua Lake lies within this county, and many relics have been found along its shores. At one place Long Point juts out into the lake, forming a long, narrow neck of land, which used to be fringed with bushes and covered with stately trees. On this point, near its outer extremity, there had been a canal and basin excavated. A party or a person could easily double the point in a canoe, part the bushes and paddle through the canal and into the basin, where they were perfectly hidden from view. I saw the remains of this canal and basin about seventeen years ago; the outlines were then quite distinct. These works, however, are not proofs of a settled population.

The Iroquois knew all about our territory; indeed, they gave the name to the lake, Cha-tau-quah, or "bag tied in the middle." In a written speech, prepared by *Corn-planter*, *Half-town*, and *Big tree*, Seneca chiefs or sachems, and presented to President Washington, they ask their "father" if he is determined to crush them, and say, in case he is: "In this case one chief has said he would ask you to put him out of his pain. Another, who will not think of dying by the hand of his father or his brother, has said he will retire to the Chataughqua, eat of the fatal root, and sleep with his fathers in peace." This speech was answered by the President, and these chiefs replied as follows: "Father, we see that you ought to have the camping-place from Lake Erie to Niagara, as it was marked down at Fort Stanwix, and we are willing it shall remain to be yours. And if you desire to reserve a passage through the Canawauga, and through the Chataughquah (Lake), and land for a path from that to Lake Erie, take it where you like best. Our nation will rejoice to see it an open path for you and your children while the land and water remain, but let us pass along the same and continue to take fish in those waters in common with you."

There was, at an early day, a path or road from Lake Erie through the towns of Portland and Chautauqua to Chautauqua Lake, and thence to Pittsburgh, which the French and Indians traveled; but, except a

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rude camp and defenses, there was no settlement nearer than Logstown, Ohio. The Senecas formed what was called the western door of the Iroquois Long-house, and claimed our county as a part of their hunting-ground. I can find no satisfactory proof of the occupancy of this territory by any tribe of Indians, unless it may have been the residence of the Kah Kwahs, a tribe said to have been driven out by the Iroquois, and which has wholly disappeared. It is claimed by some that there was once a tribe called Alleghans occupying lands in or near this county.

It appears to me that the Iroquois, admitted to be the most intelligent and powerful of all the tribes or confederacies, were never far enough advanced to construct the fortifications or to make the polished stone implements found in our county; and if they were not, was there any other people who were ever settled in this territory?

Champlain, in 1609, gives us some idea of the barbarism of the Senecas, against whom he made war. Wassenäer, the Dutch historian, in 1621–'2 represents the Indians as savages who could not have been of the "polished stone age." Cartier found them "insufferable"; so Cadillac describes them. All we can gather from historical documents leads to the belief that the stone implements, the pottery, the fortifications, the skeletons found, and the large mound (if it be one) were the work of a people existing anterior to the historic period and more advanced than the Knoshioni, or Powhatanic stocks. One argument grows out of the fact that all the relics have been dug or plowed up. Stone axes, flint or chert arrow and spear heads have often been found on the surface or just below the surface of the land, while the pottery, gouge, amulet, &c., have been found at various depths. The two skeletons found at Frewsbury under the pine stump lived and died long before the "League of the Long-house" was formed. Two feet, at least, of a secular increase has grown up since these two human beings were laid away. Can we, in the absence of "monuments of known age," ever ascertain the rate of that increase? The lofty old pine tree began its life more than six hundred years ago. How long before that tree sprouted had these bodies been deposited there? And then, again, were these two dead ones members of the tribe or nation that raised the breastworks and made the implements we find at various depths below the surface of to-day?

In my search after data upon or from which to estimate a secular increase of land I have consulted many Indians and whites, but none are able to give any facts. Sa-gun-da-wie, or Big Nose, a member of the Seneca tribe, gave me an iron ax or hatchet, evidently one of the kind used by the Dutch or French to trade for furs. He told me it was plowed up on the Cattaraugus reservation from a depth of about 8 inches, but he could not say whether the plow had ever before passed over the spot. The ax must have been lost or thrown away at least two hundred years ago; it may have been two hundred and fifty years. If we were sure that the implement was left on the surface two hundred years ago, the secular increase would have been at the rate of about 4 inches per

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century; if two hundred and fifty years had passed, it would have been at the rate of 3½ inches per century, or nearly the same as that found by Dr. Horner at Heliopolis, in Egypt. If we assume an average secular increase in our valleys of 3 inches per century, the skeletons at Frewsbury are at least eight hundred years old; they must be at least six hundred years old. I am not without hope that closer and more patient observations will, in course of time give us some reliable data upon or from which we can estimate antiquities now seemingly beyond our reach.

That Chautauqua County was once inhabited by a people more advanced than were the Indians found in the neighborhood by the French and Dutch may, I think, be assumed. That there were human beings here eight hundred or even one thousand years ago seems probable.

I think there are many reasons for the belief that the Indian race, or races, if you will, were the descendants of the Mound-Builders, notwithstanding eminent ethnologists think to the contrary.

I think our county would richly repay a thorough scientific exploration.

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## ANTIQUITIES OF ONONDAGA AND ADJOINING COUNTIES IN NEW YORK.

By W. M. Beauchamp.

The best accounts of the antiquities of this portion of New York are in Clark's History of Onondaga (1849). This work treats principally of Elbridge and Pompey. General J. A. Clark, of Auburn, has published an identification of Onondaga historical sites, which is also worthy of study. Recently the Skaneateles Democrat gave an account of the finding of a clay pipe there, with human face, 30 inches under ground, in low land; the Auburn papers, of the discovery of human skeletons in Fleming; and the Syracuse papers, of the disinterring of thirty prehistoric skeletons in stone cists in East Syracuse, and of the finding of several skeletons (historic) in Onondaga Valley.

The writer has also made extensive investigations in this section, correcting some errors, and gives, in the following notes, the results of his labors and reading. The localities mentioned will be found on the accompanying chart.

### OSWEGO COUNTY.

At Fulton, on the east side of the Oswego River, were the remains of a European earthwork, constructed in the French war, and of a semicircular aboriginal fort. The other portions were removed in making the canal. Here was a noted portage. Bone Hill, now leveled, on the west side of the river, contained large quantities of human bones, and about Lake Neawantha were many arrows.

1. On the line dividing the towns of Volney and Schroeppel was an

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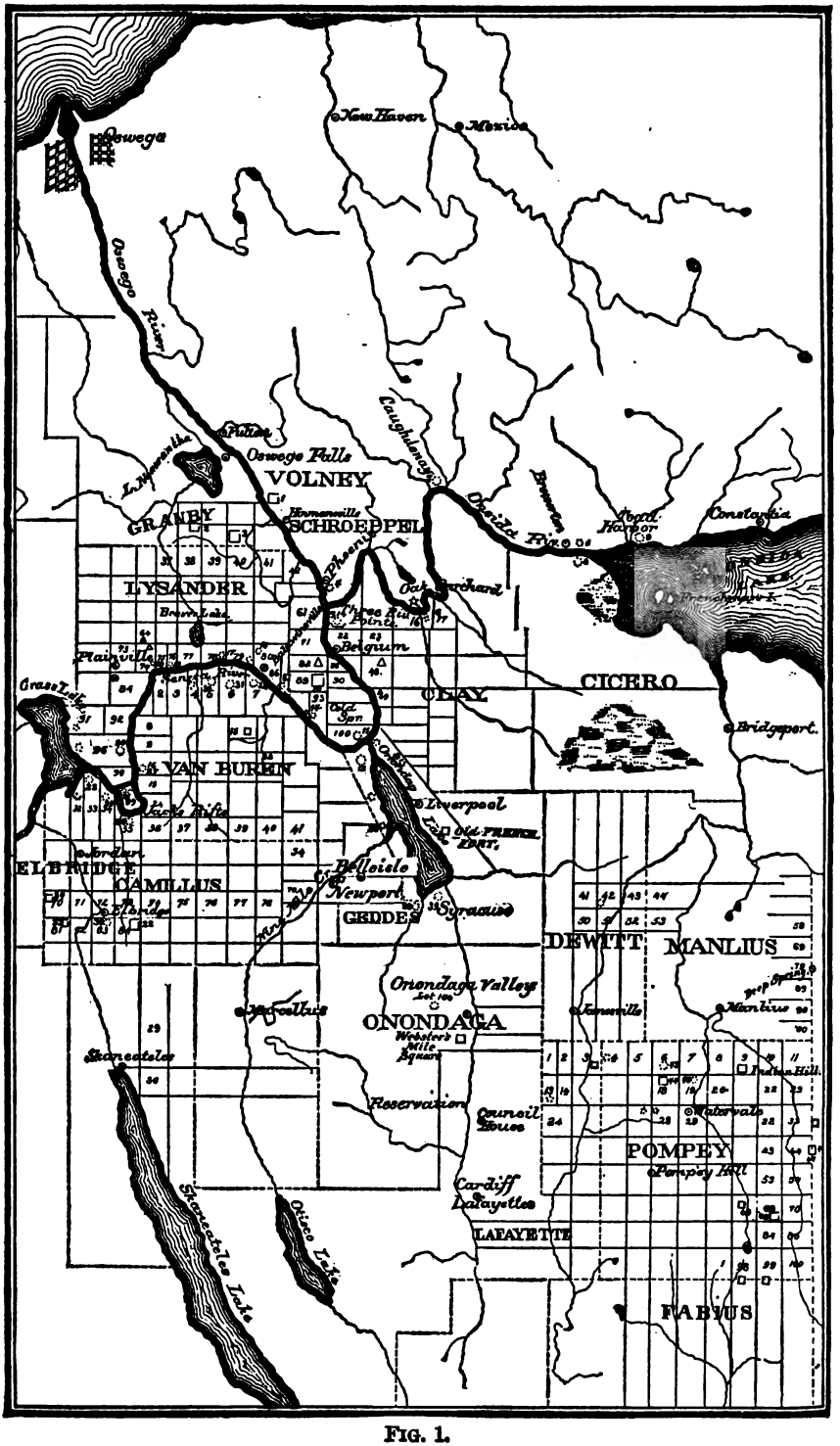


FIG. 1.

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earthwork on a hill, now destroyed. A long wall, separating the hill from a marsh on the east, still remains. Arrow-heads of flint, *en caché*, have been plowed up.

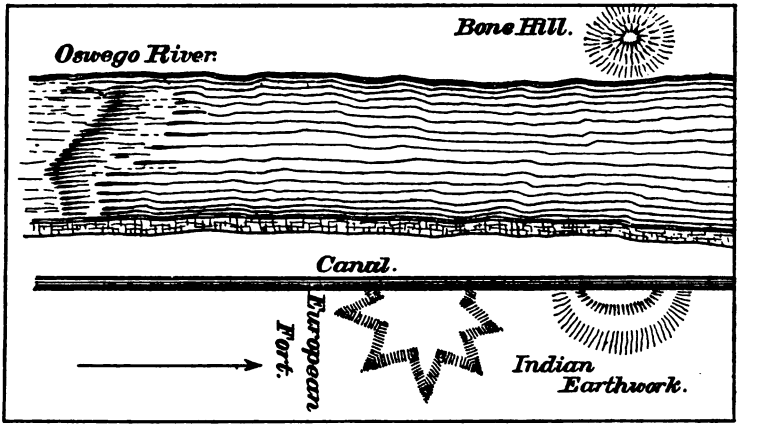


FIG. 2.

2. The remains of a circular earthwork on Mr. J. T. Geer's farm, lot 24, Granby, east of the railroad station, are in very good preservation,

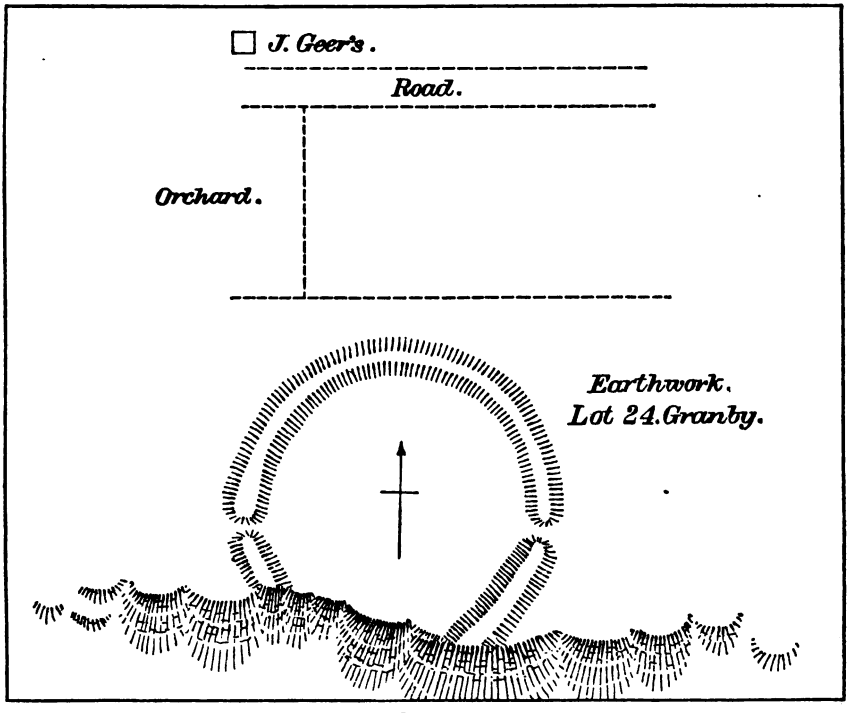


FIG. 3.

showing both gates. It yields nothing but small pieces of earthenware. The area inclosed is about an acre, and is upon a hill; Clark's estimates for this and the next are too high.

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3. There was an earthwork, like the preceding, on lot 32, east of the State road, but it has been demolished by cultivation. It was on a large plain, and many fragments of pottery, celts, and clay pipes are found.

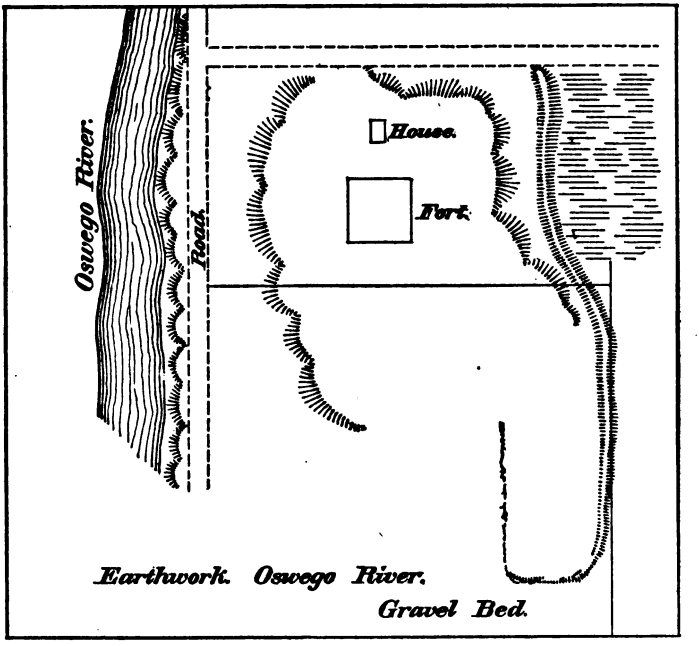


FIG. 4.

4. There were villages about Phœnix of historic and prehistoric dates. One of the most important was on a small island, where over 1,500 flint implements have been collected; scrapers, flint and quartz arrows and knives, polished slate arrows, points, celts, gorgets, and bird totems abound.

7. A village site and cemetery occur at Caughdenoy, on the Oneida River. Arrows, gouges, and fine celts have been found.

8. At Brewerton are several village sites on either side of the Oneida River, near the lake. A noted burial-place is on the north side. These villages were both historic and prehistoric, and here the walls of old Fort Brewerton are still in good preservation. Arrows, pipes, celts, gorgets, and bird totems are met with here, and between this site and Caughdenoy two fine bayonet-shaped implements of slate were discovered.

9. On the Oneida Lake, at Good Harbor, fine arrow-points, stone tubes, and gouges have been found, and there are other localities beyond.

## CAYUGA COUNTY.

52. In Brutus is the site of an earthwork, near the Seneca River, described by Squier. Fine gouges, with and without grooved backs, gorgets, arrows, and celts occur.

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53. Remains of an earthwork, figured by Schoolcraft, are still to be seen on Fort Hill, Auburn. The pipes found here are peculiar. Two other sites have been identified in Auburn, and there were Cayuga settlements on Cayuga Lake, Salmon Creek, and Seneca River, mostly of the historic period. A well-known site is on Frontenac Island. Skeletons were dug up in Fleming in 1878. West of Cross Lake are sites but partially examined, and yielding coarse implements. Early sites have been found in the southern part of the county.

### MADISON COUNTY.

The Tuscarora village of Conaseraga was in this county, as well as some Oneida hamlets and villages. There is said to have been an earthwork at Cazenovia, and there are burial-places near there. The most noted site is at Nichols Pond, on the Mile strip, which is claimed as the stockade attacked by Champlain in 1615. It is a few miles northeast of Cazenovia, and presents strong points of agreement and disagreement with Champlain's picture. It is prehistoric and yields fine relics. There was a fishing village at Bridgeport, and other sites will be mentioned in connection with Pompey.

### ONONDAGA COUNTY.

*Town of Clay.*—On lot 14, near the Seneca River, was a small village and burial-place; and also on lot 16, at Oak Orchard, skeletons, tablets, arrows, pestles, celts, &c., have been found. A fine slate "bird-pipe" was picked up here in 1878; also slate arrows on lot 48, and a sandstone tube on lot 49. A fine copper celt, weighing 2 pounds 14 ounces, was recently found on lot 22.

*Town of Lysander.*—Near Belgium, on lot 82, a fine banner-stone was discovered, and also a fine and curious copper celt in 1878.

11. A village site exists at Cold Spring, lot 100. Human remains, celts, banner-stones, flint and quartz arrows are most frequent here. A bird totem, unique in form and material, has also been found on this spot.

10. On lot 89 was an earthwork, inclosing about 2 acres, within two circular ditches. Something like a wall was between these. It was on high ground, and the relics are earthenware, celts, pipes, and slender arrows of flint.

Two small hamlets were on lots 93 and 94, with similar relics, but coarser arrows; and two others occur on lots 86 and 87 (15), near Float Bridge and Railroad Bridge.

16. At Baldwinsville are vestiges of three small hamlets on the north side of the river, one of some size. The relics do not differ from those on neighboring sites.

17. A village site of two acres, probably once stockaded, occurs on high ground on lot 78. The arrows are slender and pottery fine.

18. A village site of two acres is on lot 76, where fine drills, celts, arrows, &c., are found, with banner-stones.

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19. Here are three hamlets, with the ordinary relics, on lot 75, and there are others on lot 74. On this lot also was found a fine copper spear-head, and another was obtained on lot 64.

20. A village site remains on lot 96, where arrow-heads, celts, and a little pottery are found. This is on the Seneca River, and smaller ones occur at Cross Lake.

21. On lot 99 are two or three hamlets, revealing arrow-heads, hammer-stones, pestles, gouges, and celts. On the same lot was recently found a fine and very sharp copper celt. There are some smaller sites not mentioned here.

*Town of Elbridge.*—Small sites occur on the shore of Cross Lake, on lots 31, 32, and 33, with the ordinary relics.

23. Lot 34 contains the remains of a large village and one or two smaller hamlets, where arrow-heads, pestles and mortars, celts, fine gouges, and a little pottery have been found.

25. Lot 35 has similar remains on several sites, one historic. Stone pipes are found here in graves, and in a recent burial-place a fine human-headed pipe was unearthed. West of Carpenter's Brook one of the rare pentagonal arrows was found by the writer.

34. On a high hill on lot 70 was an earthwork, which Clark describes as rectangular, with two gateways, and inclosing 4½ acres. It really was elliptical, and inclosed a smaller area. Pottery is abundant there yet.

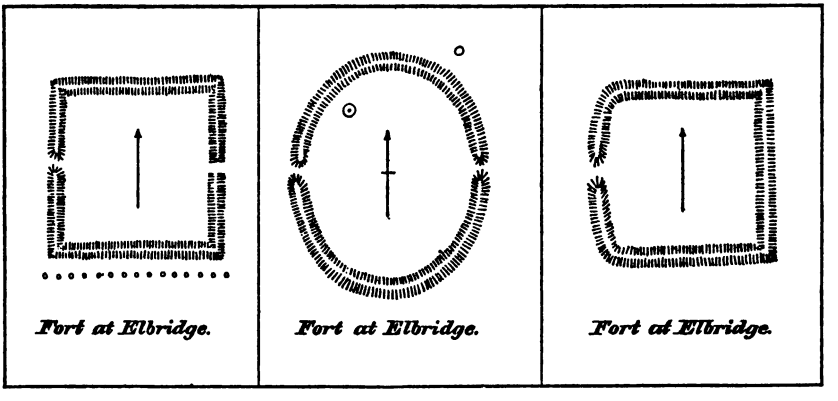


FIG. 5.

35. A smaller one on a hill on lot 81 inclosed 1¼ acres. It is described by Clark as having straight walls on three sides and a curved wall on the fourth. It was probably also elliptical, but has been leveled.

36. On lot 83 was a large Indian village. The writer has ascertained that Clark was mistaken in saying that hundreds of grooved axes were found there. None were found, and they are very rare in Onondaga County.

37. Here was a circular fort on lot 73, inclosing about an acre.

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22. On lot 84 was a circular earthwork, with two gateways, and said by Clark to have included three acres, but his estimates prove almost always too high. Earthenware always occurs in earthworks or stockades, and often river shells in the north part of the county.

*Town of Van Buren.*—26. An Indian orchard was located on lot 18.

27. Here was a small hamlet, on lot 16, with pottery, arrow-heads, and a pick-shaped banner-stone.

28. In the river, at lot 3, is a stone fish-weir in good preservation, with several bays, and formed of bowlders. Since the river has been dammed it has been generally some feet below the surface, but an unusual drought gave opportunity for full examination. There are others on the river, the Indians reserving the right to make them in their treaties.

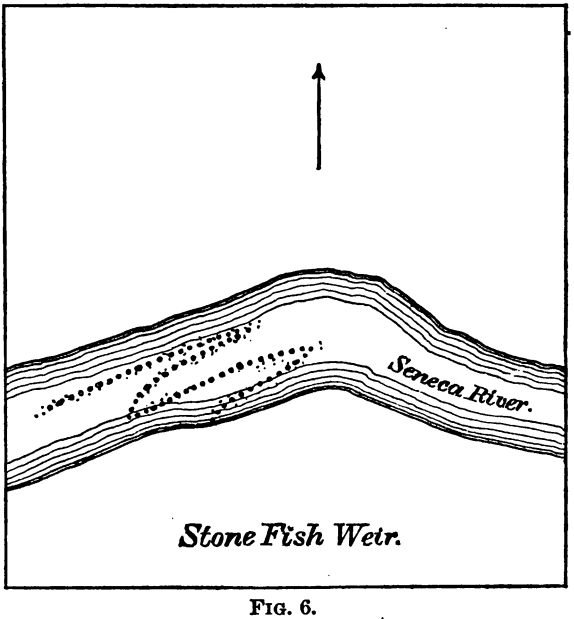


FIG. 6.

29. An Indian orchard and burial-place were located here, one of the few recent sites.

On lot 4, west side of Dead Creek, was a hamlet.

30. On lot 8, east side of the same creek, was a hamlet of considerable size, and there are fire-places on the opposite bank of the river. The Van Buren site yields celts, arrows, pestles, and pottery.

31. On high land, on lot 6, there is a large village site which was stockaded. Arrow-heads, celts, fine clay pipes, pottery, and one copper bead have been recovered. Close by was found a fine copper spear-head of large size.

32. Lot 7 includes at least four distinct village sites in Baldwinsville, south of the river, all of considerable size. On one was found a pentagonal arrow-head; on another a clay face luted on pottery. Here are burial-places and a great variety of prehistoric relics, including some fine pipes. At one point glass beads have been found.

33. A stockade, inclosing two acres, stood on a low hill on lot 13, by a small stream, and having one gateway. The usual prehistoric relics occur, with both stone and clay pipes. Near Memphis, lot 37, many fine articles have been found, as tubes, bird totems, slate knives, &c. Further east, on the Seneca River, are occasional small sites.

*Town of Geddes.*—12. On lot 9, west side of Onondaga outlet, are two

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village sites, on which occur celts, banner-stones, pestles, arrow-heads, scrapers, drills, stone pipes, plummets, gouges, together with a little pot-

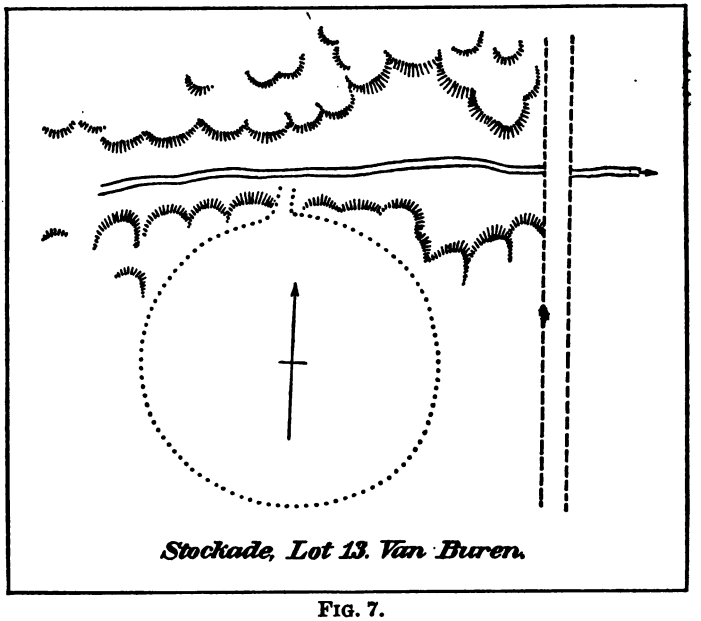


FIG. 7.

tery. Another small hamlet was east of the present outlet, and a burial-place in a gravel-bank, now removed. In the woods a little north is a small mound.

38. There is a village site on the north side of Nine-Mile Creek, with arrows and pottery, and there are others still further north, with fine relics. On one of these, by the shore, the writer obtained a small cup-shaped stone pendant of very rare occurrence, the only one in the Smithsonian collection having come from California.

The site of the ancient Kaneenda, a fishing village of A. D. 1700, was on the west bank of Onondaga Creek. Relics modern, but fine.

39. *Town of Salina.*—A scattering village stood on lots 61, 62, and 65. Pottery, banner-stones, pestles, and arrow-heads are found, and other remains occur near Liverpool, where was also a village. Bird totems have also been found in this town.

*Fort of 1696.*

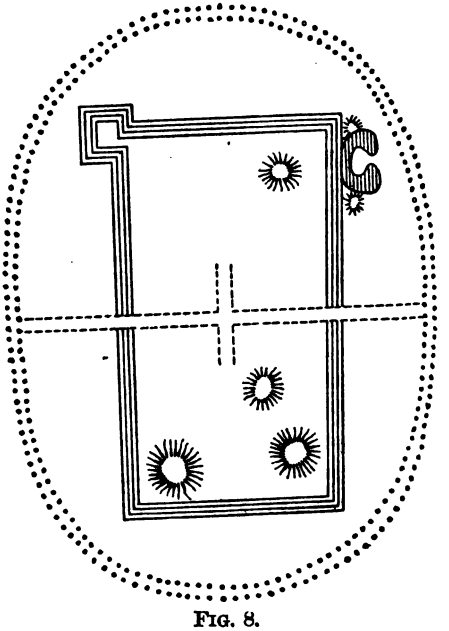

FIG. 8.

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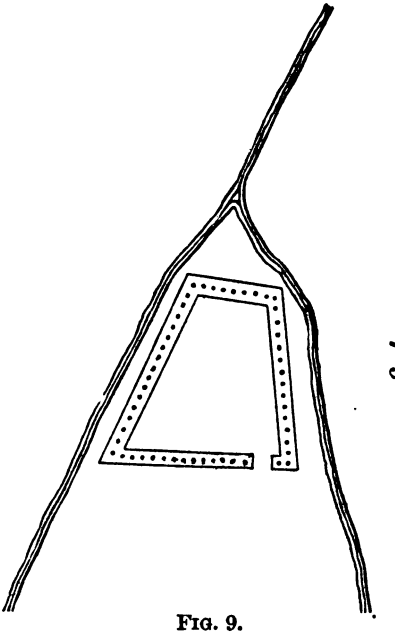
The old French fort of 1696 stood on lot 106, but traces of it can now be found only by digging. An Indian village grew up about it, and there was a burial-ground farther south. In Syracuse there were also orchards and burial-places.

*Town of Onondaga.*—Sir William Johnson built the Onondagas a stockade in 1756, which was burned in 1779. It stood on a plateau on Webster's Mile Square, and the inclined roadway by which it was reached from the creek yet remains. The writer recently examined and fully described this site. The several burial-places and other sites in this town are all modern, and yield European and Indian relics. Yet a stone plummet and a bird totem were found at the present reservation, the latter worn as an ornament by an Indian girl.

40. *Town of De Witt.*—A burial-place was discovered in East Syracuse, lot 42, in 1878, from which many skeletons were taken. They were inclosed in rude stone cists, which yielded also clay pipes, arrow-heads, and celts. Near Jamesville fine stone pipes have been found.

41. *Town of La Fayette.*—On lot 3, east side of the reservoir, is the site of the large fort destroyed in 1696, during Frontenac's invasion. It was a stockade and earthwork, and the remains are both Indian and European. Several burial-places occur in this vicinity.

42. On lot 13 was a large Indian orchard and a settlement, which was abandoned on the invasion of 1779. The relics are both Indian and European. A burial-place has the graves in rows, and also scattered promiscuously. The bodies were inclosed in boxes of wood or bark. (*Clark.*)



Fort in Pompey. Lot 44.

FIG. 9.

*Town of Pompey.*—This has many sites, nearly all historic, and fully described by Clark, but with some errors.

43. At this point is a village site, which had circular lines of stone and relics of mixed origin. (*Clark.*)

44. A little south of the last named is a burial-place, and also lines of earthworks, with similar remains. (*Clark.*)

45. On lot 19 was a village site with four streets and mixed relics. (*Clark.*)

46. On lot 9 is Indian Hill, probably the Onondaga Castle of 1650. Clark describes the settlement as about a mile long, with a burial-place of 30 acres, but makes an overestimate again. He describes the earthwork as elliptical. European relics are found there yet. It may extend slightly into lot 20.



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47. East of lot 44 was an angular earthwork and stockade, inclosing five acres, with a burial-place. (*Clark.*) The plan given by Clark would seem to be reversed by present indications. This is a prehistoric site, and has yielded very fine articles; among the rest, a clay pipe with 14 human faces, and earthenware with faces luted on at the corners. On lot 68 there is a site of about 3 acres.

48. The site on lot 69 is described by Clark as similar to No. 47, but it is on higher land and has some European relics.

50. On lot 100 is a ditch with a stockade inclosing 8 acres, with raves

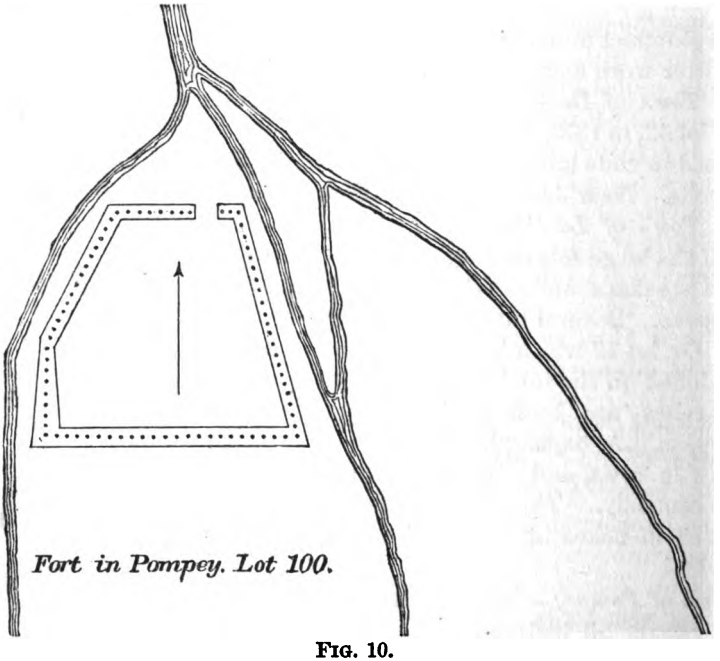


FIG. 10.

within and without. The bodies were placed in rows, which face the east and west alternately. (*Clark.*) A historic site, judged by relics. The post-holes and graves can yet be seen.

49. On lot 99, and like the last (*Clark*), graves are yet distinct.

On lot 98, touching the town line of Fabius, is another circular site on a hill-top, and of early date, though the writer discovered European articles mixed with the peculiar pottery. This is not mentioned by Clark.

54. This was "Indian Fort." An earthwork on lot 33, inclosing ten acres, with a straight ditch across the point, the flanks being defended by steep banks of the ravine. Pottery and early Indian relics abound, but with some European articles. (*Clark.*) Some have supposed this was occupied by the Onondagas just before they moved to Indian Hill. Through this town and on the Seneca and Oswego Rivers brass and iron arrow-heads are sometimes found, of European origin, occasionally perforated, and of the same pattern as those found with the "Skeletons in Armor" at Fall River.

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*Town of Manlius.*—The deep spring on lot 79 was the eastern door of the Onondagas, and shows signs of their occupancy. It was the starting-point for surveys. There is a reputed earthwork in the west part of this town, but of doubtful character.

### GENERAL REMARKS.

Some banner-stones of striped slate have been found in Camillus, and one on Skaneateles Lake. Arrow and spear heads are occasionally found in all parts of the country.

The settlements in Southeastern Onondaga show a large and general intercourse with the whites; those in the northern part but very little, the only indications there being the Indian orchards, a few brass kettles at Jack's Rifts, and a few glass beads at Baldwinsville. Many sites have no signs of vessels of any kind. Potstone vessels occur in several localities, but seldom in connection with earthenware. Banner-stones, bird totems, and gorgets of striped slate occur in many places, some apparently recent. Catlinite is found at Phœnix and Onondaga Lake. Polished slate arrows are found on all the rivers, but sparingly. Stone tubes are generally of striped slate, and of many forms, while pipes have their usual variety of form and material. Copper articles are not common, but are generally fine. Stone cups take many shapes, a handsome circular one of striped slate from Hannibal being the finest. Banner-stone and gorgets vary greatly in form and material. Plummets are often highly finished, and some of the finest drills have been discovered here. Arrows and spears are of all materials and finish. Sinkers and hammer-stones occur on most sites, and the latter exhibit a perplexing variety of forms. Many fine articles have been found on the great trail from the north crossing at Brewertown, and others near the east and west trails.

The Onondagas were partial to stockades, although they also had earthworks. None of the settlements seem very ancient, and the defensive works may be placed in four groups: Earthworks along the Seneca and Oswego Rivers, east and north of Baldwinsville; simple stockades about Baldwinsville; earthworks in Elbridge; earthworks and stockades combined in Pompey. The last two groups have features in common, but the others are distinct; they seem of different periods.

The pottery is of the ordinary Indian type, and some attempt has been made to compare sites by its styles of ornament. Celts are of both hard and soft stone, and pestles and mortars of common forms. Semi-circular slate knives are sometimes found, generally without a thickened back.

There are no large burial-places known near the Seneca River, but the bodies found are in a sitting posture, and corn frequently occurs in graves. Horn implements are found on the southern sites, seldom on the northern; and there are marked differences in arrows, spears, and earthenware.

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## A PERFORATED TABLET OF STONE FROM NEW YORK.

By William Wallace Tooker, *Sag Harbor, N. Y.*

In every considerable collection of aboriginal antiquities can be seen those thin, perforated tablets of stone, commonly called gorgets, twine-twisters, pendants, or whatever else the theory or fancy of different writers or collectors have bestowed upon them.*

These fanciful titles are mostly conjectures, for it is a recognized fact that no one yet knows the aboriginal use of these tablets with any degree of certainty.† Those with one to five perforations are all given the same name or put into the same class, without regard to the fact that those with more than two perforations of a recognized form were used for a different purpose and should be classed differently.

We do not call drills arrow-points, nor grooved axes celts, because they have the same kind of points or blades.

So it ought to be with the different forms of these perforated tablets. To those with one perforation perhaps belong the name of pendant, having been used for personal adornment, but as the greater number of those with two perforations bear no marks of having been worn suspended by a string, may be called twine-twisters or anything else that theory may invent but cannot prove. As the writer of this brief article does not care at present to theorize in regard to the uses of the tablets with one or two perforations we will leave those out of the subject and proceed to explain the object of this essay.

The tablets with four perforations similar to one already figured and described as a gorget by a well-known writer on this subject,‡ (who does not say whether the specimen bears any cord marks or not, probably not,) belong to another class, and were no doubt used for an entirely different purpose.

It is one of these tablets in my possession that I intend to describe and to prove, as I have already done to the satisfaction of all who have seen it, that it is neither a gorget, twine-twister, totem, or pendant, but something that I have never seen mentioned in any work bearing on the subject that has been accessible to me.

That something is nothing more nor less than a puzzle, a plaything made to amuse some young savage, or perhaps an older one, as we know they are easily amused.

This tablet, of which figures 1 and 2 show the obverse and reverse, is made of slate with the usual countersunk perforations common to all perforated tablets, and is marked on its edge with twenty-four tally or record marks. These have become nearly obliterated by time and weather. This tablet was found on Montauk Point, New York, and must have been

* Jones. Antiquities of the Southern Indians.

† Rau. Smithsonian Contributions, No. 287, 1876, page 33.

‡ Abbott. Primitive Industry, Fig. 361, 1881.

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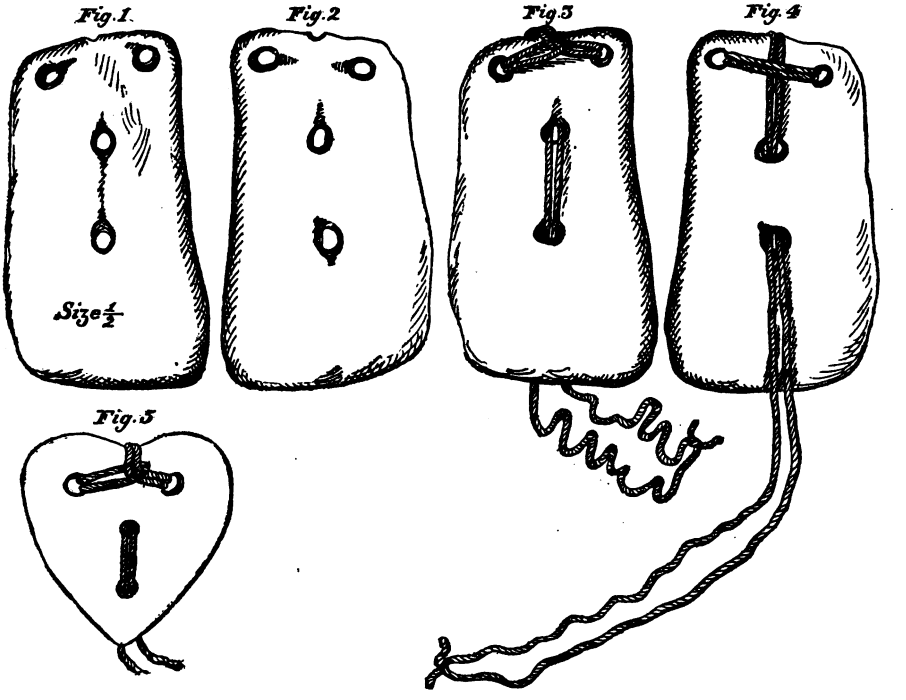
in use for a long time to have caused the wear near the perforations, consequently have been the cherished property of its aboriginal owner.

One can easily see the marks of where the cords have worn slight grooves or abrasions between the different perforations. This is where it differs from all the tablets with two perforations only that have come under my observation, as they as a rule never bear any marks of cords.*

This tablet, it will be noticed, bears on its upper margin a slight notch or groove, worn smooth as by the wearing of a cord. The abrasions on this tablet having been made by cords or sinews passing through the




various perforations, the question naturally arises how were the cords put on to have caused the wear in those particular places, and why were they put on in that way? If it was a gorget or a pendant, why the necessity of so much cord traveling through the different perforations, which evidently belonged to it when in use; why so many perforations, when one loop and one perforation would have answered? This I consider as a proof it was not a gorget, nor was it worn as an ornament.

Let me proceed and illustrate as simply as I can how this tablet was used and strung during the aboriginal era. Take a piece of cord thirty-six inches long or thereabouts, tie the two ends together, place it on

*Rau. Smithsonian Contributions, No. 287, 1876, page 33.

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the tablet, beginning at the top, forming a slip noose through the two top perforations, then following the direction of the abrasions with the tied end, we find the cord placed on the stone as in Figs. 3 and 4, which shows it better than any description could give. One slight abrasion above the third hole on Fig. 3 has not been covered by the cord; that place has been made no doubt by hanging up the tablet when not in use or by reversing the cord. This was evidently the way the string was placed on the stone originally, for in no other way could those abraded places in the tablet have been made.

The puzzle part of this tablet is to get the string off, with some one holding fast the knotted end, then to put it on again with the end still fast.

The puzzle is solved by following the cords with the loop over the top down through the two lower perforations with plenty of slack; after getting through the perforations slip the loop over and clear around the tablet, then the loop will be found separated from the two strands, then the cord can be drawn from the tablet quite easily. In putting the cord on again the process is reversed, and consequently more difficult.

Fig. 5 represents an ivory heart-shape puzzle from China. The reader will see that the cord is put on in the same way, and that the perforations bear the same relation to each other as they do in the former illustrations.

In offering the above to the scrutiny of those who have made these objects of stone almost their life study, I wish to say that I know I am invading their domain to assert that these tablets with four perforations are puzzles. But I think I have made out a good case in favor of this tablet of mine, and hope the subject may be investigated still further, and that others of the same form and number of perforations may be extant that will show the cord marks as perfectly as mine does, and thus corroborate my assertion that this tablet of stone is a puzzle.

To the many contributions in regard to the problematic uses of these tablets I offer the above mite, trusting that it will solve partly the problem that has puzzled so many.

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## ANTIQUITIES OF EAST WINDSOR, CONNECTICUT.

By E. W. ELLSWORTH, of *East Windsor, Conn.*

There are no remains of aboriginal structures in this vicinity. The indications of a former occupation by the aborigines are scattered relics found in the soil. These relics are to be found anywhere, but are not remarkably abundant in any one locality. The most promising places for search are dry sand knolls, in the vicinity of some river, brook, or large spring.

The caving of the banks of the Connecticut River occasionally disclo-

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ses a place of interment. The graves are not in groups, nor arranged according to any plan—sometimes in level loam soil, though sandy elevations seem to have been preferred.

Usually each grave contains the remains of one individual, though, in some cases, those of several have been found near each other. No burial posture is distinctly indicated. Bones, soft, crumbling, and broken, are found. The graves are not more than 3 feet deep. No evidence of artificial preservation of bodies exists, though there is a hint of cremation in the frequent occurrence of charcoal among the bones, which, however, are not plainly calcined.

Spear and arrow heads have been found cached. I have in my possession a find of fourteen flint arrow heads, averaging about two and a half inches in length, and most of them perfect. These heads were found at East Windsor Hill, on my father's farm, about 30 rods from Connecticut River, in a sand knoll, about two feet under ground, associated with a little charcoal and sooty sand. A fragment of a small and remarkably thin soapstone cup was found near them; nothing else. They came to light in consequence of the digging of a roadway through the knoll.

Another similar find was made this spring in this town (South Windsor), not far from the line of Connecticut Central Railroad, about midway between South Windsor and East Windsor Hill stations, near a brook, in low ground. The cache was opened in plowing, though the plowman did not notice it. Some boys afterward found flint spear heads among the furrows, and dug up the ground, and took out about one hundred heads, each between two and four inches in length, many whole, some broken. There was a scramble among the boys to procure them, and the collection was scattered beyond recovery before it came to the notice of any person interested to preserve it entire.

Arrow heads in unusual numbers are found on sand hills, brought to the surface by rains and winds; and in the same places it is common to find flat and sharp angular chips of flint and quartz, such as are not found in our sand elsewhere. These are suggestive of the manufacture of arrow and spear points at those localities.

Fragments of clay pottery are common; but there is nothing by which places of manufacture can be located.

Some items of value may be gleaned from the "Connecticut Historical Collections," published by John Warner Barber, New Haven and Hartford, 1836. For instance, "In the south part of the town" (East Windsor, now this town of South Windsor), "where Podunk River crosses the road to Hartford, was an Indian burying ground. A few years since a number of skeletons were discovered, by digging from one to four feet. These skeletons were found lying on one side, knees drawn up to the breast, arms folded, with their heads to the south. A covering of bark seems to have been laid over them, with some few remains of blankets; in one instance a small brass kettle and hatchet

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were found in good preservation, the remains of a gun barrel and lock, a number of glass bottles, one of which was found nearly half filled with some sort of liquid. These articles were probably obtained from the Dutch, either by present or by trade. There was also found a pair of shears, a pistol, lead pipes, strings of wampum, small brass rings, glass beads; a female skeleton with a brass comb; the hair was in a state of preservation wherever it came in contact with the comb. After the Podunks had removed from these parts they were known to have brought a dead child from toward Norwich and interred it in this burying place."

The Podunk Indians were of peaceable disposition, and we have no records of serious feuds between them and the white settlers. They (the Indians) suffered much from forays of the Mohawks, who roamed across the wilderness from the northwest.

Of scattered relics, quartz and flint arrow points are most frequently found here. These were probably in numerous instances lost by the Indians in hunting. Then we have stone axes, hoes, chisels, gouges, and pestles. A large proportion of the axes, hoes, chisels, gouges, and pestles are made of trap-rock, and many of them have had but very little artificial fashioning to adapt them to their uses.

There are localities in this State, one of which in New Britain, I have particularly examined, where trap-rock, broken from the face of a cliff by the atmospheric vicissitudes of centuries, has accumulated in a sloping pile at the foot of the cliff. This *débris* consists of elongated and angular fragments, some of which, untouched as they are by art, would, if found in our fields to-day, be mistaken for genuine Indian relics. Kettles excavated from lumps of soapstone are sometimes found. These are usually broken and portions missing. They are of rude oval form, with a capacity of from one to three gallons; they have short, projecting handles or lugs at the ends, and are without ornamental carving. The sides and bottoms are from half an inch to an inch in thickness, and are sometimes externally sooted, indicating that they were used in cooking.

Fragments of clay pottery are frequently found here, though it is rare to find a single piece large enough to show the size or shape of the vessel from which it was broken. Occasionally a sufficient number of pieces of one utensil are obtainable to admit of a reconstruction. One which I have in my possession was put together with glue and brick-dust, and some gaps were supplied with the same composition. It is now sound, strong, and perfect in appearance, and, for exhibition purposes, as good as if it had never been broken. This pot is egg-shaped, about fourteen and a half inches high and eleven inches in diameter, with a contraction in the rim below the mouth. The sides are about three-eighths of an inch thick. Similar pottery is always rudely ornamented on the outside by dots or lines, smooth or serrated, which were impressed by pointed implements when the clay was soft. Granules of quartz or mica

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were commonly mingled with the clay to prevent cracks in drying; and the ware was finished, without glaze, by burning in the same manner as modern bricks. In fact, it may be regarded as in substance soft brick of poor quality. One of these pots, recently obtained by Dr. Wood, was found in the bank of Connecticut River, in Massachusetts.* It was much broken, and has been clumsily reconstructed, but is nearly entire. The bottom is quite sharply conical, and the neck has no contraction, but slopes inward quite uniformly to the brim. The figure is somewhat that of a gigantic beet. Now, if we had given us a strap of leather, say 2 inches wide and 18 inches long, and were required to fasten it as a bail to this kettle, an obvious method would be to punch several small holes in the strap near its ends, and drill corresponding holes in the opposite sides of the neck and brim of the kettle and lace the strap thereto with a couple of strings. Whether this particular kettle ever had such a bail we cannot know, but there are the holes of suitable size and arrangement for the purpose. When I first saw them they struck me as an experimental attempt of the finder to sew or lace the broken parts together; but closer examination satisfied me that they had been drilled before the pot was baked, and while the clay was soft, with some tool like an arrow point. Subsequently I learned that the finder testified that the holes were in the sides of the neck when the kettle was found. There are no other drilled holes in the kettle besides these on opposite sides of the neck.

Breaks in Indian pottery sometimes seem to follow lines originally unsound, which gives a hint that the process of manufacture was not continuous, but that successive portions of the work were built up after previous ones had become firm by drying, from which there sometimes resulted an imperfect union between the wet clay and the dry.

About the year 1840 students of the Theological Institute, then located at East Windsor Hill, found on the bank of Connecticut River, at the west end of the institute grounds, a deposit of Indian relics. The place was a sandy knoll, above the highest water-mark of floods, and was traditionally known as "Gun's Hill," and as the site of an Indian fort. The articles then dug up consisted of fragments of large soapstone kettles, of the form previously described, axes, chisels, gouges, arrow-points, and other relics of stone. Referring to the Smithsonian work, No. 287, by Dr. Rau,† there was an article identical with figure 210; the only specimen of its kind that I have known to be found in this region. These relics were scattered among those who found them, and the sand hill has since been cut into by the river, beyond the place where they were found. I have, from that locality, a cup of soapstone that will hold about a pint; and an ancient musket bullet of large size. I have a copper chisel, like Fig. 226; length, 3 inches; width, 2; thickness, $\frac{3}{8}$;

* West side, midway between Thompsonville and Springfield.

† "The Archæological collection of the U. S. National Museum."—*Smithsonian Contributions*, vol. xxii.

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which was found by a laborer in the meadow directly west of my residence. I have not known of any similar relic found in this region.

I have several times visited the locality where was found that remarkable ancient implement of wood, which I described in the Smithsonian Report for 1876, p. 445. It lies so low that it is usually covered by the water of the river. I had a good view of it last September, but made no discoveries, and found nothing to modify the inferences set forth in the report. Undoubtedly the place was an ancient swamp, lower than the present average water level of Connecticut River. The soil was very wet with springs, some of them issuing from holes an inch in diameter. In seasons of low water many springs appear along the banks, most of which are ephemeral. The banks being previously filled with water, partly from the river and partly from the accumulations of rain, drain off in a low time.

A great deal of fine quicksand was issuing from the springs above mentioned, and I found more of this minute sand in the clay than I detected when it was in a frozen state. The natural color of the bed where untinged by vegetable material is very blue—quite different from the browns of the loam and sand now deposited by the river. The grooved log described in the report was unchanged. It inclines downward, as it enters the bank near the low-water line, and lies very firmly in place. Prying upon it with a lever ten or twelve feet long did not change its set in the least. I was deterred from attempting to dig it out by the certainty that the hole would immediately fill with water.

I visited the place again on the 18th of this month. The water was low, and appearances were not much changed. I traced the blue clay formation thirty or forty rods farther north than I had previously discovered it, and found it there containing much less vegetable material. Walking about twenty rods south of where I found the mallet, and near the water's edge, on a gently sloping beach of loamy sand, I noticed a portion of a buried stone, about two inches in length and half an inch in width. The pecked and rubbed surface looked familiar, and on being taken out it proved to be a pestle of gneiss 11½ inches long and 2 inches in diameter. It is round and smooth, well made, and perfect, with the exception of a small piece broken from the handle end.

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## SHELL HEAPS IN BARNSTABLE COUNTY, MASSACHUSETTS.

By Daniel Wing, *of South Yarmouth, Mass.*

On both banks of Bass River, which separate the towns of Yarmouth and Dennis, in Barnstable County, Massachusetts, are ancient shell heaps and stone hearths. They are particularly numerous in the vicinity of the Old Colony Railroad bridge and below the village of Georgetown; in both cases upon the Yarmouth side of the river. They are

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generally upon the brow of the river bank in a commanding position, though sometimes on lower ground. In diameter they vary from 4 or 5 to 15 feet, and in depth from 2 or 3 inches to 2 or more feet. They consist principally of oyster, clam, and quahaug shells. Stone implements have been found in the vicinity of shell heaps in great numbers, though not of many species. This I attribute to the fact that the Indians living hereabout used shells for many purposes. The Pilgrims on landing upon our shores found in the wigwams baskets formed by sewing together shells of the horseshoe crab. I have a collection of nearly a hundred spear and arrow points of stone, in about every form represented in Schoolcraft's large work on the Indian tribes of the United States. I have also a stone pestle, ax, hatchet, and a fragment of a stone mortar or kettle. All up and down the peninsula of Cape Cod are to be found stone implements of the kinds mentioned above—though in the attack upon the Pilgrims at Namskaket Creek, in 1620, the arrows used by the Indians were tipped with brass, eagles' claws, and bits of horn. This last fact led some writers to suppose that the Indians could find no suitable material on the cape for constructing their implements. Though there are no outcropping ledges on the cape, yet there are many bowlders and fragments of rock which the Indians found suited to their purposes. I know of several ancient burial places, but they have not been examined, or, if they have, I am not aware of the fact.

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## A SCULPTURED STONE FOUND IN ST. GEORGE, NEW BRUNSWICK.

By J. Allen Jack, *of St. John, N. B.*

In the autumn of 1863 or winter of 1864, a remarkable sculptured stone, representing a human face and head in profile, was discovered in the neighborhood of St. George, a village in Charlotte County, in the province of New Brunswick, Canada. This curiosity was found by a man who was searching for stone for building purposes, and was lying about 100 feet from the shore of Lake Utopia, under a bluff of the same formation as the material on which the head is sculptured, which abounds in the neighborhood. This bluff is situated three miles or more from St. George, and Lake Utopia empties into the Magaguadavic River, or, as it may be translated from Indian into English, the River of Hills, which flows towards and pours through the village in the form of a beautiful waterfall. The stone, irrespective of the cutting, which is in relief, has a flat surface, and is of the uniform thickness of 2 inches. Its form is rounded elliptical, and it measures 21½ inches longitudinally and 18¼ inches across the shorter diameter. The stone is granulite, being distinguished from granite proper by the absence of mica. The sculpture, shortly after it was discovered, attracted a good deal of attention,

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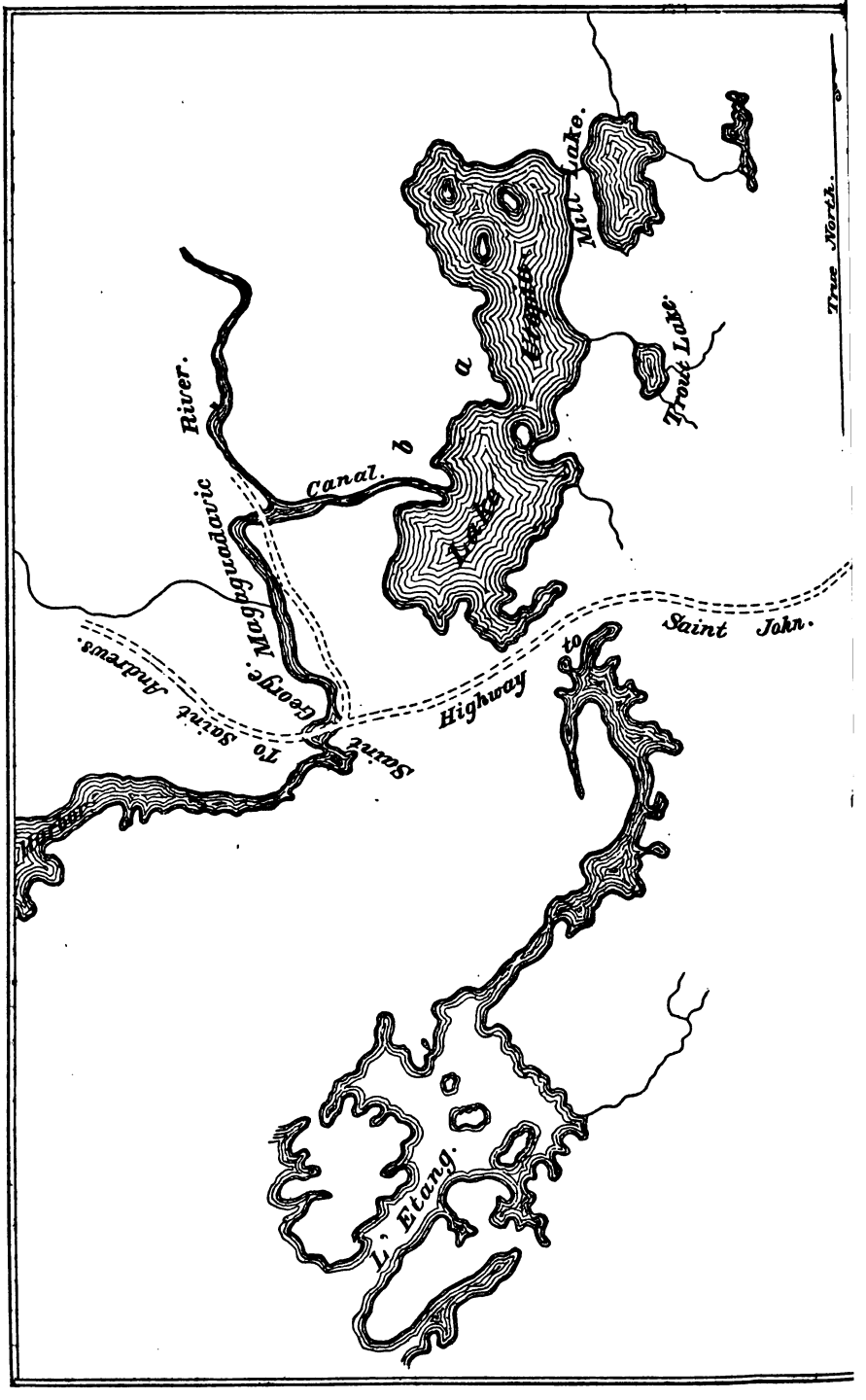


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and was examined by a number of persons possessing respectable scientific attainments. As far as I am aware, however, neither its visible characteristics, nor its history, or its historical associations have ever been carefully studied by any conversant with American archæology. This carved stone was found at the point marked *a* in the accompanying map. For myself, while undertaking to comment upon this interesting memento of a past age, I must at the outset acknowledge my want of qualifications for the purpose, and explain that my object is rather to suggest than to dogmatize, and to give such small assistance to the learned as is comprised in scraps of information which I have been able to obtain from various sources.

A tolerable knowledge of the history of Charlotte County and of the province, and an imperfect memory and record of the contents of several letters received from various persons upon the principal subject, are all of some service in furthering my purpose. The letters which were written to assist me in preparing a paper upon the stone, subsequently read before the Natural History Society of New Brunswick, an association not now in existence, were unfortunately destroyed in the great fire of St. John. The paper itself was preserved, and embodies at least a portion of the contents of the letter. Opinion, at the time of discovery, was somewhat divided, both in regard to the nationality of the workman by whom the stone was carved and also in respect to the object of the work. Three suggestions, one of which is probably correct, were offered by different parties with reference to the workmen: First, that he was a British colonist; secondly, that he was a Frenchman, and, thirdly, that he was an Indian. The discussion of these several propositions naturally suggests, if it does not necessarily involve, in each case a consideration of the motives of the workman. I have little hesitation in dismissing, as highly improbable, the hypothesis that the artist was a British colonist. The appearance and position of the stone when discovered, to which I shall presently

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more particularly refer, convince me that it was not carved for the purpose of deceiving scientific investigators, as might be, and I believe has been, charged. For the same reasons I am led to form a strong opinion that the carving was executed long before the date of British occupation. Irrespective of these reasons, however, I would point to the carving itself as an answer to the theory; and the argument here makes as strongly against the suggestion of French origin as it does against that of British. The features and expression of the face are not in any respect European, neither is the shape of the head. Again the elliptical eye, appearing on a profile as it should only properly appear to the spectator in the full face, is a characteristic of Eastern, especially of Egyptian, art. I have not the means at hand to verify the opinion, but, if my memory serves me rightly, this same peculiarity appears in delineations of human faces among the ancient Mexican Indians, if not among other American tribes. The theory for which I contend is, that a European workman, either skilled or unskilled, would have produced something having a semblance to a European subject or work of art. The suggestion of French origin for the sculpture leads me to speak of the connection of the French with the history of this part of the province.

The earliest record of the French occupation of Acadia is that of De Monts, who with a party of fellow-countrymen passed the winter of 1604 on the island of St. Croix, situated on the river of the same name, forming the boundary between the province and the State of Maine, and distant about twenty-one miles from the village of St. George. I have never heard of there being any considerable number of French settlers in the neighborhood of St. George, and cannot even say with certainty that there were any French families permanently settled there. L'Etang approaches to within 300 feet or so of Utopia, and La Tête Passage is distant about eight miles from the village, and the occurrence of these names may lead to the inference that there was a partial French occupation of the adjacent country. I have indeed heard of inscriptions on the rock at Black's Harbor, or its vicinity, on Bliss's Island, which are supposed to be in French, but have never met any one who had actually seen these inscriptions. This island is nearly half way between Campobello or Deer Island and Utopia, from which it is about ten miles distant, and opposite the mouth of La Tête Passage. By no hypothesis, however, am I able to connect this curiosity with any European custom or idea, and consequently the remainder of my investigation will be devoted to the argument in favor of its Indian origin.

If it is possible to derive approximately accurate information as to the age of the stone from its situation and condition when found, it would of course assist materially in discovering the nationality of the workman. I believe that the finder, who, as I have stated, was searching for stone for building purposes, was attracted by the shape of the stone in question; that it was lying on the surface and covered with

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moss, and that it was not until the removal of the moss that the true character of the object appeared. An examination of its surface must, I think, convince the observer that the stone has been subjected to the long-continued action of water, and from its situation it seems fairly certain that the water which has produced the wasted appearance was rain, and rain only. An expert might perhaps form a tolerably accurate opinion as to the period which would be required for ordinary rainfalls to effect such results as are here plainly visible. For myself, I hesitate to speak of the precise period where the stone showed no marks of rain. I feel, however, that I am safe in expressing the belief that it would require a length of time commencing at a date before a Frenchman is known to have set foot in the country to produce from the action of rain so worn a surface as this stone exhibits. If this proposition is correct, there can be no reasonable ground to doubt that the carving is the work of an Indian. I may refer, but solely for the purpose of expressing my disbelief in any such hypothesis, to the suggestion that art, employed for the purpose of deceiving, and not any force of nature, has produced the worn appearance to which reference has been made. The mossy deposit, and the unfrequented locality in which the curiosity was found, both aid in dispelling this idea; but even had it been found in an often visited part, and without its mossy covering, I should have no hesitation in affirming that its worn appearance was not due to the hand of man. I may further urge that, had the object of the workman been solely to deceive, he would have scarcely selected a stone whereon to carve of a granite character, and especially a piece of granulite, one of the hardest of rocks to work, being not only hard in quality but of crystalline structure, and ill-adapted for receiving a polish, at least under rough tools. Granting, however, that for the reason stated we are justified in assigning the origin of the carving to the Indian period, there still remain many difficulties in the way of determining its object or meaning. There are at the present time several Indians in the neighborhood of St. George, but half a century ago there were many more in that locality, and previous to the commencement of that period the vicinity of the canal, about one and one-half miles from the bluff mentioned before, was continuously a favorite camping ground for these people. The Magaguadavic Lakes abound in fish, even at the present day, and the surrounding woods, formerly well stocked with all kinds of game, would prove a great attraction to the savage hunters, and the proximity of the sea would also add to the attractions. The Magaguadavic Indians speak the Milicete language, and are, I believe, members of that tribe, and are, of course, descended from the Algonquins. I speak with some hesitation of their being Milicetes, because I understand that the Passamaquods claim to be distinct from the Milicetes, and there may be some question whether Magaguadavic Indians were not a portion of the former tribe. A very obvious question presents itself to the mind of the investigator, which may here very properly be considered. What purpose would an Indian have in view in producing this curious

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work of art? In the paper which I read before the New Brunswick Society I was unable to give any tolerably satisfactory reply to this. At the present time I think that I can suggest an answer which may be correct, and which, at least, deserves some consideration. The members of that society were, if I mistake not, generally impressed with the force of the arguments brought forward to support the suggestion that the sculptor was an Indian, and were inclined to guess that the carving was, in some indefinite way, connected with the funeral rites, or was in commemoration of a departed brave. No work published at that time afforded any solution of the difficulty. No relics of a similar character to this had been dug up at any Indian burial ground in New Brunswick, and although our Indians produce very well executed full relief figures of the beaver, the muskrat, and the otter, upon soapstone pipes, their skill apparently goes no further in this direction. I have indeed seen rude sketches of human figures executed by these people, but have never seen or been informed of any likeness to a man being carved by them in stone. It was only by bringing pieces of information together, and after the lapse of some years, that I was enabled to suggest an answer to an apparently almost unanswerable question. Upon one occasion, while in conversation with an old resident of St. George, he gave me an account of a somewhat singular monument which, many years before this period, stood on the summit of a high hill near the canal, and about one-half mile distant from the place where the carved stone was found. It consisted of a large oval or rounded stone, weighing, as my informant roughly estimates, seventy-five hundred weight, lying on three vertical stone columns, from ten inches to one foot in height, and firmly sunk in the ground thus . · . (The above weight, I should imagine, is an over-estimate, but I give it as stated to me.) The site of this monument is marked *b* on the preceding map. My informant stated that the boys and other visitors were in the habit of throwing stones at the columns, and that eventually the monument was tumbled over, by the combined effort of a number of ship carpenters, and fell crashing into the valley. Some years afterwards I read, for the first time, Francis Parkman's "Pioneers of France in the New World," when my attention was at once arrested, and the conversation with the gentleman from St. George brought to my mind, by a passage which occurs on page 349, of that highly interesting work.

Champlain, the writer states, had journeyed up the Ottawa River beyond Lake Coulange, and had reached an island in the neighborhood of the village of a chief named Tessonat, which, Mr. Parkman is of opinion, was on the Lower Lake des Allumettes. I quote what the historian writes of what the French explorer sees: "Here, too, was a cemetery, which excited the wonder of Champlain, for the dead were better cared for than the living. Over each grave a flat tablet of wood was supported on posts, and at one end stood an upright tablet, carved with an intended representation of the features of the deceased."

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Now, it may be that there is no connection whatever between the Indian custom described by Champlain, as existing at the place described, and the finding of the sculpture and the appearance of a large stone, supported on stone columns, at a place in New Brunswick. The points are certainly far apart, and while in the one case there is clear evidence of the common custom, there is in the other barely sufficient evidence to justify the supposition that there may be a single instance of the adoption of the custom. The Magaguadavic Indians indeed have a tradition that they were driven from some distant part of Canada to the seaboard, but if this were established as a fact, it would scarcely aid in the elucidation of this matter. Two conjectures may be made, however, either of which if correct might account for the supposed existence of an Ottawa custom in New Brunswick. An Indian might have been captured, or might have been expelled by his brethren on the Lower Lake des Allumettes, and been carried, or have found his way, to the maritime province. Or, a young Milicetes might have been carried away by the Ottawas, and have escaped to his old home. In the one case the prisoner would naturally wish to secure for his burial place the monuments which had ornamented the graves of his fathers, and might have succeeded in securing the aid of his captors in the accomplishment of his object. In the other the escaped captive might well desire to adopt the arts of his former masters, and wish to take his last rest beneath a monument with his effigy at its head. The use of a large stone instead of a wooden tablet scarcely deserves comment, for the change of material would in no sense interfere with the object in view, but on the contrary would render the monument more deserving of the name.

I think that a careful or even superficial examination of the carving must impress the observer with the idea that it is intended to represent the face of an Indian, and the head, although viewed only laterally, certainly presents many of the peculiarities of the North American type. Of course the examiner is placed at a great disadvantage in having only a profile, and not a completely developed head, as for ethnological purposes craniology is chiefly available when an opportunity is given to measure the comparative breadth from the petrous portion of the right, to the petrous portion of the left temporal bone, or to measure from and to the parts of a carved head representing these portions. There is a portrait of a Magaguadavic Indian by Mr. C. Ward, of St. George, which is considered to present some points of resemblance to the head in discussion, which may be found in the Illustrated London News of the 5th of September, 1863, No. 1220. The fashion of wearing the hair as represented by the carving is perhaps somewhat calculated to puzzle the investigator, but there is scarcely anything sufficiently definite in the delineation to enable one to trace an analogy to either Indian or European fashions. It may be noticed that some have expressed an opinion that a wig was intended to be represented.



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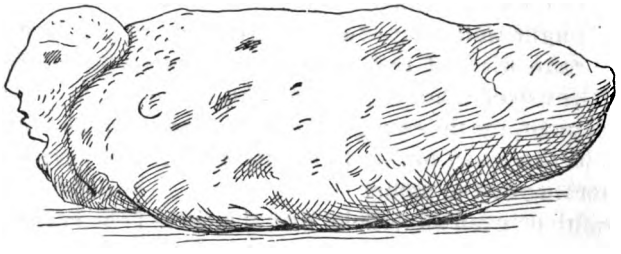
## A SUPPOSED SPECIMEN OF ABORIGINAL ART,

Discovered at Gondola Point, parish of Rothesay, in Kings County, New Brunswick, and exhibited at the Provincial Exhibition held at the Mechanics' Institute, St. John, New Brunswick. (Autumn of A. D. 1851?)

By G. F. Matthew.

Living in the neighborhood of the spot where this object was found, I undertook, at the request of J. Allen Jack, esq., to make inquiry into the circumstances connected with its discovery. It had been found, I was told, on the farm of Andrew Kilpatrick (now owned by David Kilpatrick), about half a mile from the Episcopal church, near Gondola Point. It was turned out from a depth of between three and four feet below the surface of the ground in digging a cellar on the farm referred to; and was intrusted to Mr. Harding to take to St. John and exhibit at the provincial exhibition held at the Mechanics' Institute (in the year 1851?)

In general outline the object, which is a rough-looking stone, is of an



oval form, 2 feet 11⅝ inches long, 1 foot 3½ inches broad, and 1 foot 2⅞ inches deep; and as regards most of its surface does not differ from an ordinary bowlder of Lower Carboniferous conglomerate, numbers of which lie scattered around the neighboring fields. This conglomerate consists chiefly of pieces of granite, and protogene in association with less numerous, but characteristic fragments of crystalline limestone of the upper series of the Laurentian area, the border of which lies about a mile to the southward of the point where the bowlder was found. I am satisfied, therefore, that the bowlder was not brought from a distance, but belongs in the neighborhood where it was dug up.

While, as regards most of its surface, this stone does not differ from an ordinary bowlder, there is an exception in the appearance of one end. This has been carved into the form of a human head, looking out, as it were, from the end of the stone. The features are aquiline, rudely carved, and somewhat irregular, as though chiseled by an unskilled hand. They present the appearance of having been worked out upon the surface of the stone by using certain hard protuberances as the basis for the more prominent features and graving the rest to correspond. The artist has apparently seized upon a rude semblance of the human face presented, and worked out the finer lineaments to correspond.

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On examining the carved head carefully it was found that the surface had been coated with a dark-red pigment. This could hardly have been on the stone when it was dug up, if, as I was assured, it came from a depth beneath the surface of three feet or more; and for the following reasons I suppose it to have been painted after it was exhumed.

An examination of the bank or hillside where the relic was found revealed the presence of "Drift," a deposit of the glacial and post-glacial period, immediately below the surface loam, which is a foot thick. The point at which the stone was dug up is not more than about sixty feet above the Kennebecasis River, and it would thus for a long period have been below the sea-level in the time marked by the accumulation of the Ledalelay of which (or of the bowlder clay) the deposit containing the stone lay consisted. If buried by natural causes in this deposit the age of the relic would be carried back to a very distant period—a period so distant that one may question whether it could have had its present appearance at that time. And it seems more reasonable to suppose that if it possessed its present aspect when dug up, it must have been buried later than the Drift period, either by accident or design. The paint with which the face is covered appears to have been a subsequent embellishment, for long-continued exposure to the action of the elements would have removed the oil or other substance which serves to give body to the color, and the paint would have remained as a dry powder liable to be brushed off with the slightest touch.

The mode of burial of this stone cannot now be verified, owing to the crumbling condition of the bank, and its actual age as a work of art must remain to a great extent a matter of conjecture. The naturally rough features have been rechiseled, and (since the stone was dug up) coated with paint; so that in some respects the object is not in its pristine condition, and its value as an object or specimen of aboriginal art has been seriously marred by these changes.

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## ANTIQUITIES OF NOVA SCOTIA.

By Rev. George Patterson, D. D., *of New Glasgow, N. S.*

No earthworks, properly speaking, exist in this region, but shell heaps are to be found in various places. The shores of this county at various places give evidence of the former occupation of the country by the aborigines, particularly the shells, which are found in the soil as it is turned up by the plow, and the stone implements which were formerly picked up in abundance, and are still sometimes found, though more rarely. The principal places are, Middle River Point, Fraser's Point, both sides of the East River at its entrance into the harbor, Fisher's Grant, and the Beaches, all in Pictou Harbor, and almost every island

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and headland in Miegomish Harbor. In the neighboring counties on the northern shore of the province, the same thing is to be found, particularly at Antigomish Harbor to the east, and at Tatamagouche to the west.

There is scarcely anything in this province that can be called a mound or earthwork, at all events like those found in the Western States. There was found some years ago, at Tatamagouche, a small heap. It was situated on the farm of the late Rev. Hugh Ross, next to A. Campbell's, which forms Campbell's Point, at the entrance of the harbor. It was opened and examined some fifty years ago by the late Dr. Thomas McCulloch, of Pictou, who found in it a large number of human bones, and various stone implements. He published no account of them, but I have learned that he came to the conclusion that it was a place where a large a number had been buried, probably after a battle. The spot has long been plowed over, and the ground leveled.

There was another found at Kempt, Yarmouth County, in the western part of the province. The spot where it was found was some fifteen miles in the interior, and some distance from the river. It was opened by Dr. Joseph Bond, of Bear River, Digby County, N. S., and from him I learned that it was about ten feet in length, five feet in width, and four feet in height. It has been represented to me as resembling a large cradle hill. In this were found forty very beautifully executed stone-arrow or spear-heads, which are now in the county museum at Yarmouth, established by L. E. Baker, esq., who has had them photographed. Dr. Bond supposed that it was an ancient burying place, though he found no bones, for which he accounted by supposing that they had become so entirely decayed as to be no longer recognizable. But Dr. John W. Webster, of Yarmouth, informed me that from the material around he believed it had been the site of an old workshop. This might be the case, and the mound might have been a *cache* of such implements.

I have seen some thin layers of shell at points on the shores of our harbors, but I am told that there are some of considerable thickness at points in Miegomish Harbor. They are generally close by the shore, and the sea, wearing away the soil, exposes them on the banks. But none in this part of the country have undergone a proper examination.

There are in the museum of the Mechanics' Institute, St. John, N. B., two sculptures. The one is very rude, and will be found figured in Dawson's Acadian Geology. The other is a medallion of about fifteen inches in diameter, containing a rather well-executed profile of a human head. But I am not certain that this was found in the province.

The rocks on the north shore of the province are soft, and are being worn away so rapidly that if there had been any carving upon them it would long ere now have disappeared. In Yarmouth a stone has been

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found on the shore with what looks like letters engraved on it, but they have never been deciphered. The stone is in the possession of John K. Ryerson, of Yarmouth. Dr. Gilpin, of Halifax, has discovered a rock in Annapolis County with some engraving on it. In the history of the county of Pictou, published by me, on pages 29–31, will be found an account of the only genuine prehistoric cemetery with which I have met. I could see no plan of arrangement in the graves. They would be found at distances of from three to five feet apart, and over a space of about fifty feet square, lying to the west of a pit. I was not able to find any to the eastward, that is, farther away from the shore. The graves formed a layer of brown, velvety mold, two or three inches deep, and containing fragments of bones. The ground is gently sloping and facing southwestwardly. In only one instance could I detect the posture of the body. This one was lying on its side, and doubled up. In other instances there were plainly a number together, and the bones were so decayed and seemingly so mixed, that I could not trace any order. I did not particularly observe, but I think the body lay north and south with the face to the west. The graves were shallow, not more than from nine to twelve inches deep.

There was no evidence of desiccation. But there is in the possession of Dr. Wm. Doherty, of Kingston, Kent County, N. B., a perfect mummy of an Indian head. The face retains its features, and the hair adheres as completely as in life. It was found on a part of a bank of the river Richibenclo. Along with it was found a copper kettle, showing that the burial took place after the arrival of Europeans, and while they still retained the practice of burying the valuables of the deceased with him. The skin has a bluish discoloration, probably from the copper. I am informed that up the St. John's River a large copper kettle was found with the remains of a body, which had been squeezed into it.

There are no quarries. There is an island known in the Micmac language as Pipestone Island, to which they may have resorted for materials for their pipes, but I have not been able to find the place.

The only workshops that I have heard of in these maritime provinces is what is known as Bockman's Beach, Lunenburg County, N. S. It is a beach of sand and gravel, running east and west, perhaps 300 yards in length and connecting an island, known as Bockman's Island, with the main-land. On the north side the sea has heaped up the sand and gravel, but in the rear of this it is lower, and here, about midway between the shores, have been found large quantities of flakes and splinters of stone and arrow-heads in various states of preparation. Many of these have been carried away by collectors, but the sea washes over the spot, and after every storm more are exposed.

A small circular heap, about 6 feet in diameter, and from 15 to 18 inches high at the time of my visit, has been supposed by some to have been the seat of the ancient arrow-maker. But on close examination of the spot and from information received from those living in the

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neighborhood, as to the changes effected upon the shore by the action of winds and the sea in storms, I could easily see that the sand around it had been swept away, leaving this spot a little above the head of the surrounding beach. In fact changes have been going on which render it impossible to ascertain how the ground lay in those old days. But the amount of splinters, hammered stones, &c., plainly shows what had been going on. These principally consist of agates and jaspers, which are not to be found in any rocks near, but are similar to those found at the present day in the trap rocks bordering on the Bay of Fundy, forming the northern mountains of King and Annapolis Counties, distant, in a direct line across the country, nearly sixty miles. A few are of the dioritic rocks, which are found intrusive in the southern mountains of the same counties, and some are of quartz, such as is found in the metamorphic rocks in the immediate neighborhood. An examination of these rocks shows the process which had been going on. Here is a stone at which the old arrow-maker had been hammering, with the view of splitting it longitudinally, but the result was several cracks crosswise, and it was thrown away. Here is a disk-like stone, around the edge of which he had been hammering, but, instead of splitting through the center, it broke away in fragments to the side. And then there are flakes of all sizes and thickness. A few complete arrow-heads have been found, and a much larger number of imperfect ones. These are all small, from 1⅜ to 2 inches in length, but are very finely executed. Stones are also picked up which bear on their edges the evidence of having been used as hammers. A few stone chisels or axes have also been found, but it is evident that the work carried on was mainly of forming arrow-heads, for which they brought from the Bay of Fundy the finer stones mentioned. Small pieces of copper are also found. They consist sometimes of small nuggets seemingly in their natural state, sometimes they are flattened out by hammering, and they are also formed into small knives or piercers.

There were portages, where they carried their canoes from one lake or stream to another, or across a headland. These were mere paths through the forests, and are now either grown up with wood or have been plowed up.

I have some small copper knives and small specimens of copper, the latter from Lunenburg County. It has commonly been supposed that the Micmacs were entirely ignorant of the use of metals till the arrival of Europeans. These show that they had at least got to the length of making use of the small specimens of native copper found in the trap rocks of the Bay of Fundy. I have also some bone spear-heads, a good deal decayed, from some cemetery; also, a pipe from the same place. It is made out of a very hard granitic rock, and Dr. Dawson, of McGill College, Montreal, our highest authority on the geology of these regions, says that he knows no rock of the same kind nearer than Bay Chaleur,

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and, furthermore, he has since received a number of pipe-heads, resembling it in shape, from the Upper Ottawa.

There is, in the Provincial Museum at Halifax, a collection of various aboriginal antiquities. It contains, besides the usual stone axes and arrow-heads, some small pieces of copper, similar to those from Bockman's Beach, and a flat pipe found in the interior of the province, remarkable from the circumstance of its having been found so far east, it being held that this is characteristic of the mound-builders or tribes of the far West. There are also a few articles in the museum of the Mechanics' Institute of St. John, N. B. The most remarkable are the sculptured figure and medallion already referred to, and a small hammer with a short stick for a handle, remarkable for the manner in which it is fastened to the helve, being merely held by a band of burnt clay. Professor Jack, of the University of New Brunswick, Fredericton, N. B., is said to be the best authority in that province on this subject. In the collection of Judge Desbusay, of Lunenburg County, N. S., are also small pieces of copper from Bockman's Beach. Dr. Gray, of Mahone Bay; in the same county, also has a collection.

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## THE ABORIGINES OF FLORIDA.

By S. T. Walker.

In comparison with their number and size, the shell-heaps of Florida contain but few relics of the people who constructed them. Besides the ashes of their fires, the refuse of their feasts, and the fragments of their utensils, we find but little to aid us in our researches into their civilization or condition. The shell-heaps are so vast in size that it is only when the sea has swept away their slopes or when the lime burner has attacked their sides that we get an insight into the mysteries of their interior, and even then there is little to be obtained and but few uncertain data given upon which to base a calculation. By far the greater mass of these heaps is composed of shells, bones of mammals and birds, ashes, charcoal, and thin layers of soil. Scattered throughout the heap however there are quantities of broken pottery and near the top, a few objects of stone, and numerous implements of bone or shell.

The accompanying diagram represents a section of a shell-heap at Cedar Keys, Fla., formed by cutting through the center of a mound to open a street. This may be considered a fair representation of the interior of all shell-heaps with the exception of the unusually thick stratum of soil near the center of the mass. From this it will be seen that the pottery is pretty uniformly distributed throughout the heap from the bottom to the top and is generally in small fragments, most probably pieces of pots and utensils accidentally broken during the ordinary culinary opera-

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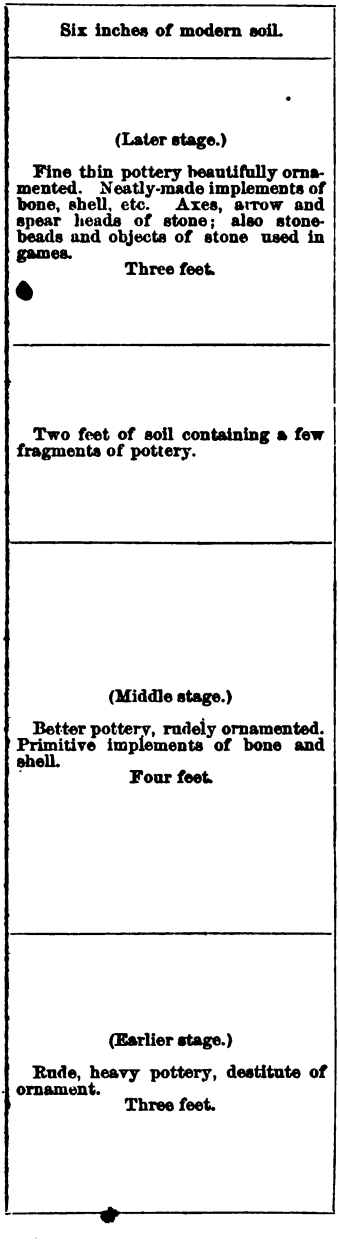
tions of their owners. I have never known a whole vessel to be found in a shell-heap. An examination of this pottery, then, it seems would give us a pretty correct idea of the progress of the aborigines in the art of pottery during a period of time corresponding with that of the age of the shell-heaps. An inquiry therefore into this progress among the builders of the shell heaps necessarily involves a question of time, and is by far the most difficult part of the subject.

SECTION OF SHELL-HEAP.


Six inches of modern soil.
(Later stage.)
Fine thin pottery beautifully ornamented. Neatly-made implements of bone, shell, etc. Axes, arrow and spear heads of stone; also stone-beads and objects of stone used in games.
Three feet.
Two feet of soil containing a few fragments of pottery.
(Middle stage.)
Better pottery, rudely ornamented. Primitive implements of bone and shell.
Four feet.
(Earlier stage.)
Rude, heavy pottery, destitute of ornament.
Three feet.

In the section of the shell-heap given in the illustration, it will be seen that a stratum of soil six inches in thickness has accumulated since the completion of the mound, and that a similar stratum nearly two feet in thickness occupies a position near the center of the mass, indicating a cessation in the growth of the heap, when it had reached a height of seven feet, for a period of time sufficient for the accumulation of this two feet of soil on the surface of the shell. After this the accumulation of shell begins again, and when it had acquired a depth of three feet it ceased again and this time forever.

Now, we know pretty well how long a period has elapsed since the aborigines ceased to inhabit this region, and although it is possible that there has been no addition to this heap for seventy-five or one hundred years, we know positively that there has been none for the last fifty years. It requires then at least fifty years to accumulate six inches of soil on a shell-heap, and consequently we may be justified in supposing a period of two hundred years to have been necessary for the formation of the central stratum of soil in this mound.

A comparison of the pottery immediately above and below this stratum of soil representing a period of two hundred years ought to give us some idea of the rate of progression made in the arts. And a critical comparison of the different styles of pottery with each other in different portions of the heap should give us a rude idea of the age of the shell-heaps. The object of the present

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paper is to present the reader with a description of the relics and pottery found in each stratum of the shell-heap, beginning at the foundation and ending at the top, and from a comparison of the various styles which mark the march of progress and improvement, to hazard a conjecture as to the time which elapsed from the beginning of the shell-heaps up to the advent of the European.

In all the large shell-heaps examined hitherto I have invariably found pottery in the lowest stratum of shell, and, in many instances, in the soil beneath the foundations, which I regard as conclusive evidence that the aborigines were acquainted with the art of fabricating earthenware pots long before they began these vast accumulations of shell. The art however was in its rudest state. The fragments are thick, heavy, and coarse, the composing clay often containing a mixture of coarse sand or small pebbles. The utensils were of large size and rudely fashioned, as shown by the curves of the fragments, and they were destitute of all attempt at ornament. The rims were plain, and were not thickened or re-enforced to increase their strength. This style is found generally for about three or four feet in height, and may be said to repsent the first stage. Above this a gradual change is perceptible, the two styles overlapping, so that it is difficult to say where one begins and the other ends.

The second stage however as we ascend, soon becomes plainly marked. The walls of the utensils become thinner. The rims are turned outward and slightly thickened. Dots and straight lines are cut into the sides of the vessel by way of ornament, and the thickened rims are sometimes "pinched" like pie-crust with the fingers. During this stage the savage artist first began to mold his wares in rush baskets, which were subsequently burned away, leaving the vessel curiously checked as though it had been pressed while wet with coarse cloth. The use of sand or gravel is totally abandoned during this stage, and the quality of the pottery is in every way improved. Implements of shell and bone are sometimes found, but they are generally few in number and rude in manufacture.

This brings us to a portion of the shell-heap corresponding in position with the two-feet stratum of soil shown in the diagram, and that stratum marks the transition period between the middle and modern styles of Indian pottery. Immediately below this layer of soil we find the curved line introduced in ornamental designs on the utensils, and a few fragments of the rims of pots show that ears began to be attached to them for the convenience of suspension, and that the thickness of the ware was reduced by the employment of better materials. Immediately over the stratum of soil all the fragments show improvement on those below. New patterns are introduced, and we begin to find fragments of dishes, bowls, cups, as well as those of jars and pots, many of them of elegant design and of a superior quality of ware. Stone axes, arrow-heads, bone and shell implements are of frequent occurrence.

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As we approach the top, marks of improvement are numerous. All the larger pots are furnished with numerous ears, through which strings might be run for suspension. Vessels are sometimes furnished with handles, and all the finer wares are elaborately ornamented with zigzag lines, curves, dots, and, in rare cases, with figures of men and animals. The finest wares are invariably found on or near the surface, and among them we find the first attempt at coloring their work.

We thus observe that from the testimony of the pottery the age of the shell-heaps is divided into three distinct periods, which may be styled the ancient, the middle, and the modern, which are further divided by two periods of transition, the latter of which is marked by the stratum of soil representing a period of two hundred years. Assuming that the march of improvement was uniform, and seeing that a period of over two hundred years* was occupied in a transition from the middle period to the modern, I think we might be safe in attributing a period of at least two hundred years to each of the five eras mentioned above. This would give one thousand years for the age of the oldest shell-heaps.

I might properly extend this time much beyond these figures, as there are many shell-heaps which were abandoned fully as long as this upon which there is no accumulation of soil, or at best but little, so it would seem that I have adopted the smallest period of time necessary to a correct calculation, still these calculations may be far from the truth. There are so many possibilities to be encountered that the question of age is lost among them. The growth of a shell-heap depended, of course, upon the number of people living in the vicinity, whether their residence was continuous or occasional, the abundance or scarcity of shell-fish, and many other accidents too numerous to mention. Layers of soil in different portions of the same heap show that portions of the mass ceased to grow for long periods of time, while thick strata of clean shell indicate the rapid and continuous growth of other portions. Future investigations may throw more light on this subject at present involved in doubt and mystery.

The key to the whole matter is a critical study of ancient pottery. That the aborigines of Florida reached the state of advancement in which they were found by the Europeans by slow and painful steps is evident to the most superficial observer. That they did advance is equally plain. According to the estimate of time made in this paper it was three hundred years before they thought of ornamenting moist clay with lines and dots, and five hundred years before they thought of making ears to pots. Dishes and bowls were not thought of for eight hundred years, and cups with handles for nearly one thousand. Still they progressed, and who can say what point their civilization might have reached had the discovery by Columbus been delayed another thousand years?

*I say "over two hundred years," because this transition began in the latter years of the middle period and continued in the earlier years of the modern period.

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# ABSTRACTS FROM ANTHROPOLOGICAL CORRESPONDENCE.

Numerous correspondents of the Institution, in writing upon various matters, frequently convey valuable information. It is the design of this chapter to put on record those statements of correspondents respecting archæology that are not sufficiently long to form a separate article.

BARKLEY, W. F., writes that about 15 miles from Mount Pleasant, Pa., are the remains of a burying ground, in which the dead are interred beneath piles of stone.

CARRUTHERS, ARTHUR, writes that in the western part of Amherst Township, Lorain County, Ohio, on the farms of Joseph Rice, David Shevarts, and others, are sandstone rocks rising about 1 foot above the ground and from 6 to 50 feet across the top. They belong to the Waverly sandstone. The impressions of Indian moccasins, bears' tracks, turkey tracks, and those of small birds are very plentiful. They do not all run in the same direction, but cross and recross one another.

COUES, ELLIOTT, mentions a cliff-house on Beaver Creek at its junction with the Rio Verde, 40 miles from Fort Whipple, Ariz.

FERRY, C. M., of Oneida, New York, mentions the opening of a trench of buried Indians. Part of the bodies were in wooden coffins, plainly indicating recent burial. Some of the dead had been wrapped in blankets, and a child's moccasin was ornamented with glass beads. Buttons and bricks also add their testimony to the fact that the cemetery is not ancient.

FLINT, EARL. Rock inscriptions extend all along the summits of the Cordilleras, from Bolivia to Mexico. They are similar in character. At Telembela, in Ecuador, is a sacrificial stone, similar to that in Mexico. A sculpture of a chief with a scepter in each hand, surmounted by a condor, and standing on the prostrate form of a supplicant, was found in Peru. This resembles very much the figure in the Palenque stone, but it is coarser. At Samiapata, near the top of the declivity, sculptured in relief, is a figure of a tiger. A little higher up is a similar one, more massive, from which a double series of rhombs lead from the sculpture to a kind of throne, supported on four feet of a bird of prey, surrounded by a circular line of seats. These all join to form the body of the cross. The top is in shape a species of platform, on which are chiseled hemispheric holes, one yard in diameter, communicating with one another by



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small canals. Sculptures of this class occur from Bolivia to Columbia. Lower down, at Samiapata, are niches cut in the rock, and buried near them are inscribed stones. Similar ones, and less elevated, where the Cordilleras separate the territory of Chaco from Chiriquanes, occur in a real desert, and being on a declivity, have escaped the alluvial burial of the first. Inscribed on the stones found at Chaco and Samiapata and those of the niches are the same persons, figures and paintings as those on the murals of Palenque.

GRAHAM, N. B., writes that there is a mound four miles south of England's Point post-office, Cherokee County, North Carolina, on the farm of Jesse Raper. It is the only mound within ten miles, is circular in ground plan, 120 feet in base diameter, and 90 feet apex diameter. It is composed of alternate layers of burnt clay, ashes, and soil.

HARLAN, CALVIN S., describes a cave in a rocky hillside, four miles from Ellora, Baltimore County, Maryland, known as the Old Indian Cave. It extends into the hill about 36 feet. Around the entrance are ashes and charcoal, which are also mingled with the earth about the floor; oyster shells, some of which show the action of fire, occur in the *débris*. Arrow-heads are also reported to have been found.

About one and a half miles from Sweet Air, in the same county, are the remains of an old Indian trail, leading from the Rocks of Deer Creek, in Harford County, a seat of the Susquehannocks, to a settlement south of Sweet Air post-office, at which spot arrow and spear heads have been found, together with several axes.

Other localities in the vicinity of Sweet Air have been mentioned where chipped stone implements occur.

HOMSHER, G. W., Fairfield, Indiana, writes to the Institution that he is preparing maps and sketches of the mounds, circles, implements, &c., of Franklin County, in that State.

KALES, J. W., sends the following report: Along the east shore of Cayuga Lake, New York, occur many relics of aboriginal populations. On the beach are found multitudes of notched sinkers. On the points these relics are most numerous. Several burial places have been discovered; one of them is on a small island opposite the village of Union Springs. The skeletons rest on a substratum of rock, about 2 feet below the surface. A large number of skeletons were unearthed about one mile north of Union Springs and 200 feet from the lake. They were promiscuously buried in a pit under about 2 feet of fine black earth, those of men, women, and children being intermingled. The skeletons of males indicated men of large size and great strength. No relics occurred in the pit.

LUTHER, S. N., writes to the Institution with reference to the former use of manganese as a degraissant in the manufacture of Indian pottery,

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in the vicinity of Nelson Ledges, Portage County, Ohio. These ledges are outcrops of the conglomerate, and their cavities had furnished shelter for the ancient people. In the talus and on the higher level are found areas of dark soil, rich in relics of various kinds, and among these only occur the lumps of manganese. This mineral crops out in places at Bainbridge, twenty miles away, and no nearer. Pottery fragments, showing black spots of the manganese, and lumps having a polished surface, have been picked up. Mr. Luther also speaks of a great mortar which appears to have been used in crushing quartz.

McLEAN, JOHN J., while transmitting a meteorological report from Sitka Castle, Alaska, notes the "fish-dance," performed in honor of the arrival of the shoals of herring. "The herring are so plentiful that an Indian with his nail-studded thin board could catch a canoe full in an hour. The Sitka Indians built fires at the mouth of Indian River, and sang and danced their national airs every night for more than a week. I witnessed several of the dances at the arrival of the fish. None but the men participated, the women sitting around the fire and keeping up a shrill monotonous chorus. The dancing movement consisted in a step from one foot to the other and stamping to emphasize the music, the body more or less stooped, and the head jerked from one side to the other in rapid movement. The melodies were extremely simple, containing three or four notes. The time was now slow and stately, like a funeral dirge, again quick and lively. There were numerous pauses, each ushering a slight modification of the melody and time. On the whole the tune was not inharmonious, having a barbaric fitness to the people and the occasion. They seem to have an appreciation of the picturesque, for they had chosen one of the prettiest spots in the whole neighborhood for their festivities. The dark snow-capped mountain for a back-ground and the broad waters of the beautiful bay, lit up by the full moon. The subject of the songs was a description of hunting and fishing. Their costume consisted of blankets with tin tags, sewn on, jingling with each movement of the body, wigs made of oakum and eagles' feathers, and blackened faces striped with vermilion. The sports were kept up each night until a late hour.

MACLEAN, J. P., describes and figures in his letter of December 10th two circular inclosures in Sycamore Township, Hamilton County, Ohio. He also found on Blennerhasset Island numerous antiquities, among them a shell heap, 100 feet long. He reports that Dr. G. O. Hildreth, in sinking a cistern a little west of the Graded Way, Marietta, Ohio, came upon a cave containing human and animal bones. The cistern was commenced 15 feet below the plain, on a side hill. Six feet below the surface the diggers came upon a solid mass of concrete, composed chiefly of quartz pebbles. Below this was a cavern one foot in height, on the floor of which were the bones above mentioned. There was no outlet to the cave, and it is to be supposed that by the filling up of the

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ravine the original opening was closed. In the Marietta Works* a line of embankments leads from the mound inclosed by a circle to the square containing 27 acres. Recently, in cutting down a portion of this embankment, near the fence, the workmen came upon a circle composed of sandstone pestles and round balls, arranged radially, the balls alternating with the pestles.

MONTFORTH, WARREN. There are located in the vicinity of New Liberty, Owen County, Kentucky, a few mounds. There are a number of mounds in the "bottoms" along the Ohio River, and on the hill-tops not far from the Kentucky River. There are others in secluded spots. One of them, about 50 feet in base diameter, and 15 feet high, is situated at the junction of two small streams, about a mile and a half from the Ohio River, in Gallatin County, surrounded on all sides by high hills. It has been cultivated a number of years and many relics have been found.

NULL, JAMES W., sends the following account of mounds, &c., in the neighborhood of Reel-Foot Lake, in Western Tennessee, a body of water 20 miles long and from 2 to 5 miles wide, formed by the sinking of the earth during the earthquakes of 1811 and 1812. Near Thompson's landing is a group of seven mounds within a space of 3 acres, circular in outline, 5 feet high, and 20 or 25 in diameter. Some were bare, others had large trees growing upon them. A large tree uprooted revealed the structure of one to be a layer of soil over a heap of sand. One-fourth of a mile north is a group of eight, very similar to the former in every respect. A few hundred yards further north is a group consisting of a central mound, about 3 feet high, kidney-shaped, 100 feet long, and 40 to 50 feet wide, surrounded by a number of circular mounds 2 to 3 feet high. Several isolated mounds were discovered larger than those in groups. Dyer, Obion, and Lake Counties are all said to be rich in aboriginal remains.

PALMER, EDWARD, reports mounds and graves at Niles Ferry on the Tennessee River, at Chattanooga, and at points near Nashville.

PEET, S. D., announces that he has been prosecuting the survey of the mounds of Wisconsin during the past year at his own expense.

RICE, H. B., announces the discovery in South Florida of crania having a peculiar shape. "They are without foreheads or depressions at the root of the nose. A number were buried close together, inverted, and in proximity to normal skulls erect in position, all partly decomposed. The crania do not exhibit evidences of flattening."

RUSBY, H. H., describes a cave near Silver City, N. Mex.

* "Ancient Monuments of the Mississippi Valley," by E. G. Squier and E. H. Davis: plate xxvi.—*Smithsonian Contributions*, vol, i.

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STOCKTON, J. B., Toronto, Kans., reports that there are no mounds in that vicinity. A cave near the town is reported to have carvings on the walls.

TANDY, W., of Dallas, Hancock County, Illinois, excavated a mound near that place, which had been the burial place of warriors. All the skeletons were those of adults; ten of the crania and a vertebra having arrow-points sticking in them. There are about thirty mounds in the vicinity of Dallas, of which Mr. Tandy will make a map.

WALKER, S. T., writing from Milton, Florida, makes the following mention of antiquities: "I know of quite a large mound containing bones on the Withlecoochee River, seven miles north of Crystal River post-office, from which human bones have been taken; another is situated 28 miles north of Milton, the most wonderful that I have seen. It is one hundred paces in circumference."

He also states: "I have sailed over five hundred miles, and located many mounds, shell heaps, sites of ancient villages, cemeteries, &c. The most important discovery was that of an ancient canal leading from the head of Horseshoe Bayou into the fresh-water lakes of the interior. This canal is about 10 or 12 feet wide, and must have been originally from 6 to 15 feet deep. It is as straight as an arrow, excepting an obtuse angle in one place. Estimated length, one mile. Large pines grow on the embankments and cypresses, 2 feet in diameter, in the bottom of the trench. The lakes, connected by this canal, are about 7 or 8 miles long, and are famous for the immense numbers of fish which they contain. All along Four-Mile Point shell heaps abound, and low mounds, from 1 to 2 feet high, are scattered through the woods for miles. These were undoubtedly built for residence, each being large enough to accommodate a single house, excepting a few which are large enough for half a dozen. East and west of Four-Mile Point the signs of ancient occupation grow gradually less, especially toward the mouth of Choctawhatchie, where a single sand mound exists. West of this, at Indian Bayou, there is a large domiciliary mound and several shell heaps. No more occur until East Pass is reached, where are several small heaps and a cemetery. The burials seem to have been made in separate graves, some being covered with a species of clay or coquina rock. At Camp Walton, or Brook's farm, on the mainland, at the head of the sound, were discovered fifteen large shell heaps and a large domicile mound, 15 feet high, 135 feet wide, and 300 feet long, containing a layer of shells and some human remains, while all through the hammock there are dozens of small circles of earth, &c. At Black Point, at the mouth of Garnier's Bayou, was found a large sand mound, 10 feet high, with a circular base about 200 feet in diameter, and having a sloping roadway to the top.

"Although no oysters now live in Choctawhatchie Bay, they once existed there in vast numbers. The heaps are composed almost entirely

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of this shell, and they were are as large as they ever grow in this latitude. Scallops also were once numerous, but now are entirely extinct. The cabbage palm and the pelican have also vanished within the memory of old men."

WIGGINS, JOHN B., announces the discovery of the mound where the Indians buried their dead after the battle between the Shawnes and the Nanticohes, at Nanticoke, Hanover Township, Luzerne County, Pa.

WILLIAMSON, GEORGE, calls attention to works near Marksville, La. South of that place is an embankment extending from a bluff on an old channel of the Red or some other river, a distance of a mile or more. The embankment is from 8 to 12 feet high and is flanked on the outside by a wide, deep ditch. In several places appear to have been sally-ports, and large old forest trees are growing on the bank. Inside the work are two large mounds, one of them covering several acres. In this vicinity are a great many mounds, some of them of great size. The remains are on the first high land on the bank of what was once a river channel, communicating with the Atchafalaya.

WILTHEISS, C. J. incloses testimony of A. J. Templeton and Joseph Defrees with reference to finding two tablets in a gravel bank within the corporate limits of Piqua, Ohio, on the land of Wilson Morrow. One of these tablets was 15 feet from the surface, which was covered with 4 feet of loam. On the surface of the object were "characters" and in the center lead inserted. The second was found the next day in the loose gravel which had caved down.

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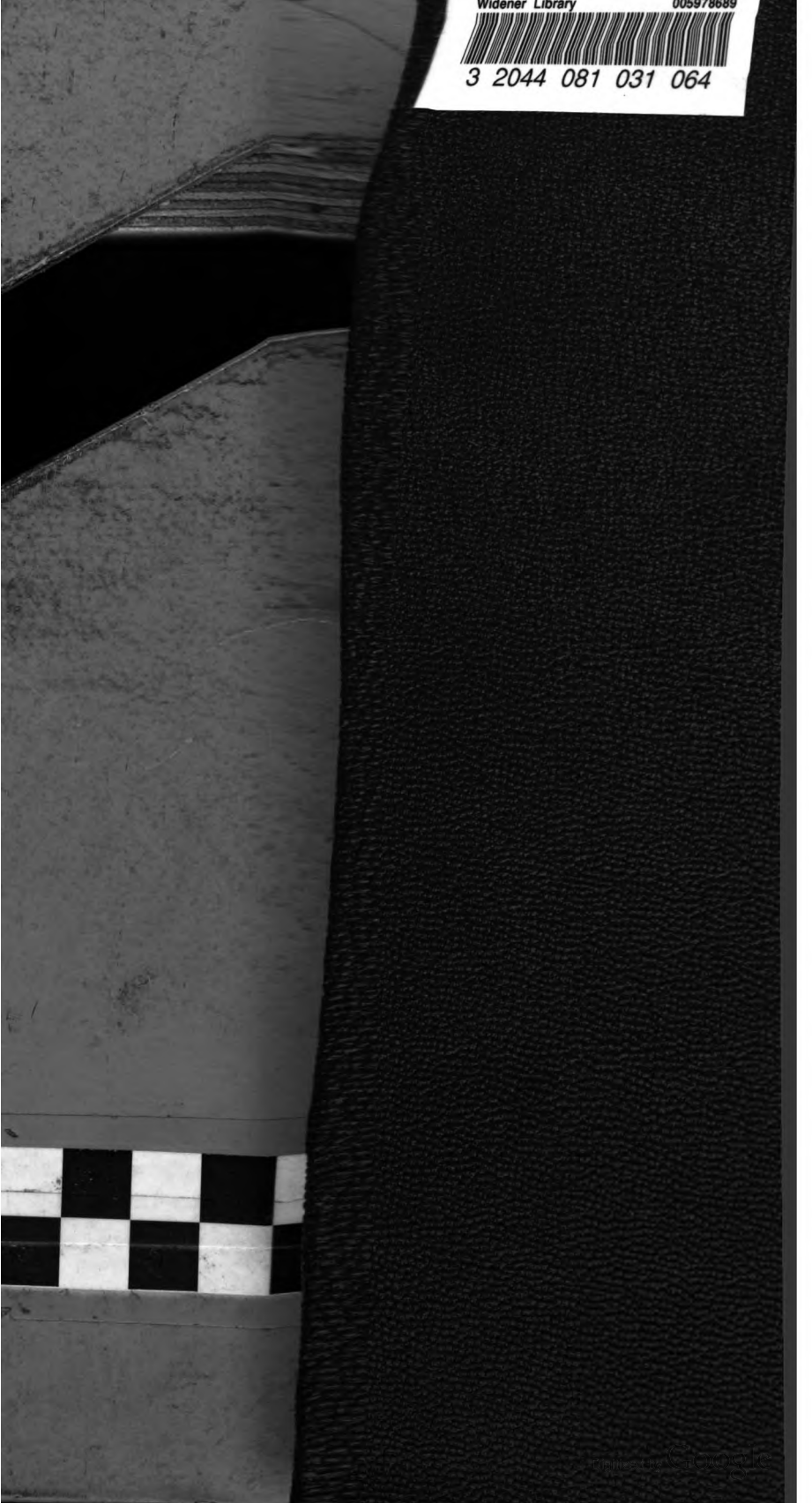
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